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OIL WORLD
and Petroleum Industry

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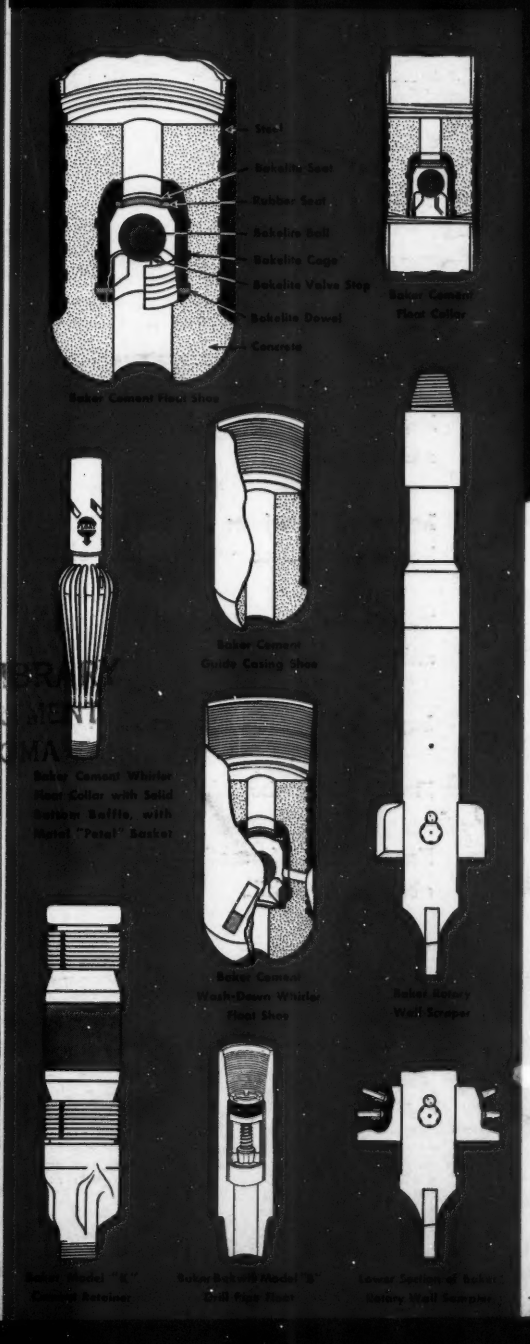

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As superintendents and crews well know, this business of drilling oil wells is a fast moving, high tension game . . . where anything can happen and frequently does. The responsibility is great and enough "natural" hazards are encountered without the supervising personnel having to worry about the safety and performance of the tools they use.

This is just ***another*** reason why Baker equipment is the first choice of practical oil men. They know from long experience that every tool or device bearing the name "Baker" will ***Safely, Efficiently and Economically*** do the job for which it was designed.

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BAKER OIL TOOLS
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H. C. SMITH T-39
WIRE LINE CORE DRILL

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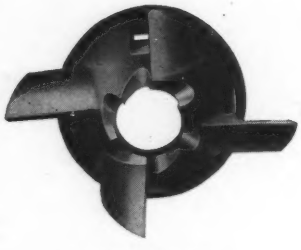
WIRE LINE CORE
DRILL



SOFT FORMATION
CUTTER HEAD

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ASSURES RECOVERY OF LARGE UNBROKEN CORES WITH INCREASED SAFETY AND ECONOMY.

- Simple and positive locking of inner barrel while coring and retrieving of barrel after coring operation is completed.
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CALIFORNIA
OIL WORLD
and Petroleum Industry

THE AUTHORITY ON THE CALIFORNIA OIL INDUSTRY

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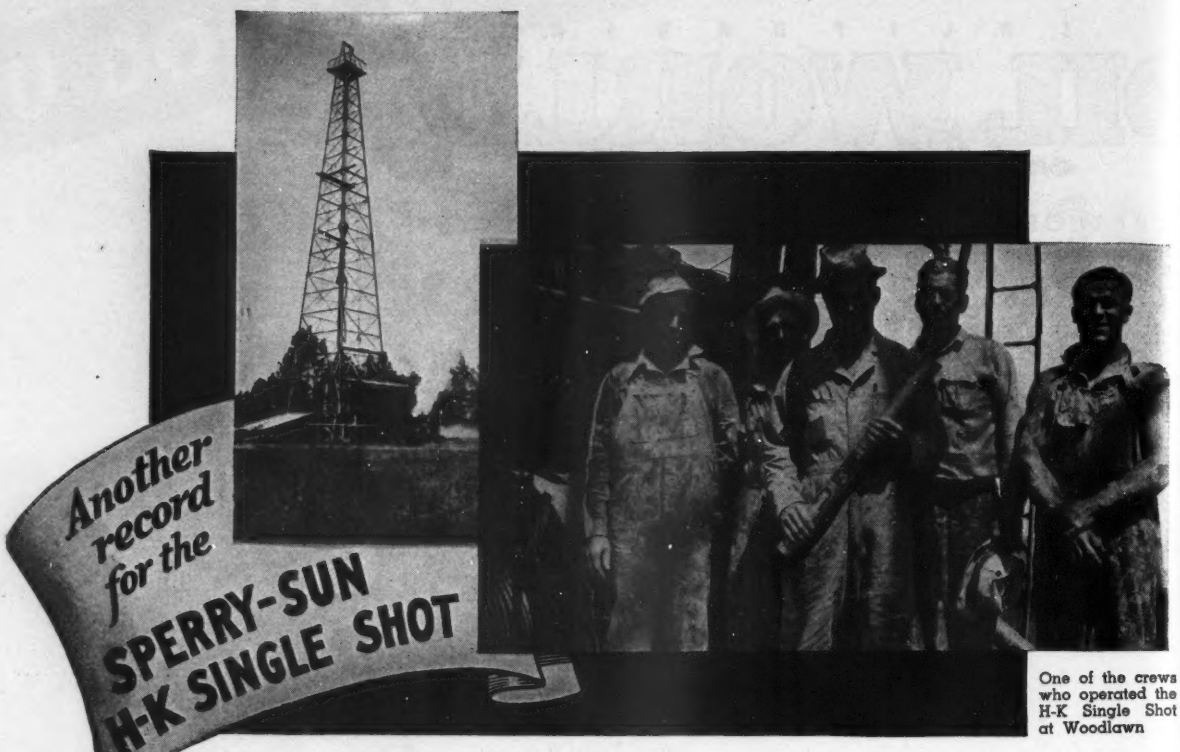

One of the crews who operated the H-K Single Shot at Woodlawn

FIVE MONTHS *in continuous service*

Without Repairs or Replacements . . .

. . . and STILL GOING!

196 pictures in over 46,000 feet! No repairs—no replacements! It sounds like a derrick man's dream—but it's the actual performance record of an H-K Single Shot instrument used in the Union Sulphur Company's development at Woodlawn, La. And as this is written, the same instrument is still going strong!

No kid-glove handling helped to make this record possible, either. The instrument was handled by twenty different men. The company has two rigs in the field constantly, and the instrument was transported from one to the other in a small truck, taking the rough with the smooth.

Rented on a daily basis, the Sperry-Sun H-K Clinograph is reasonable in operating cost. Plan to use it on your next drilling operation!

HERE'S THE RECORD

Name of Well	Depth in feet
Racca No. 1	8911
Calcasieu Bank No. 1.....	8905
Thomas No. 1	9552
Miller No. 2 (still drilling).	9111
Donovan O'Connor No. 1 (still drilling)	8159
Donovan O'Connor No. 2 (side-tracked hole)	2283
	46,921 feet

The SPERRY-SUN H-K Self-Checking Single Shot

SPERRY-SUN WELL SURVEYING COMPANY

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Advent of Super-Equipment Is Ushered

By Superior in Rio Bravo Field

When Superior Oil Co. completed Moodie No. 1, Sec. 26,28-25, recently for 3000 barrels daily production of 37° gravity crude, the northern limits of the Rio Bravo field were extended a quarter of a mile. This is interesting enough, but there are two stories somewhere in this successful drilling venture, and only one of these is apparent to the oil scout. Moodie No. 1 was drilled with the largest and heaviest equipment ever used in California. Much of what follows will deal with super-boilers, super- drawworks, super-engines, super-pumps, super-swivels, and super-etc. Here and there the writer may evidence his curiosity about that hidden second story: Why the super-rig to drill a typical Rio Bravo test?

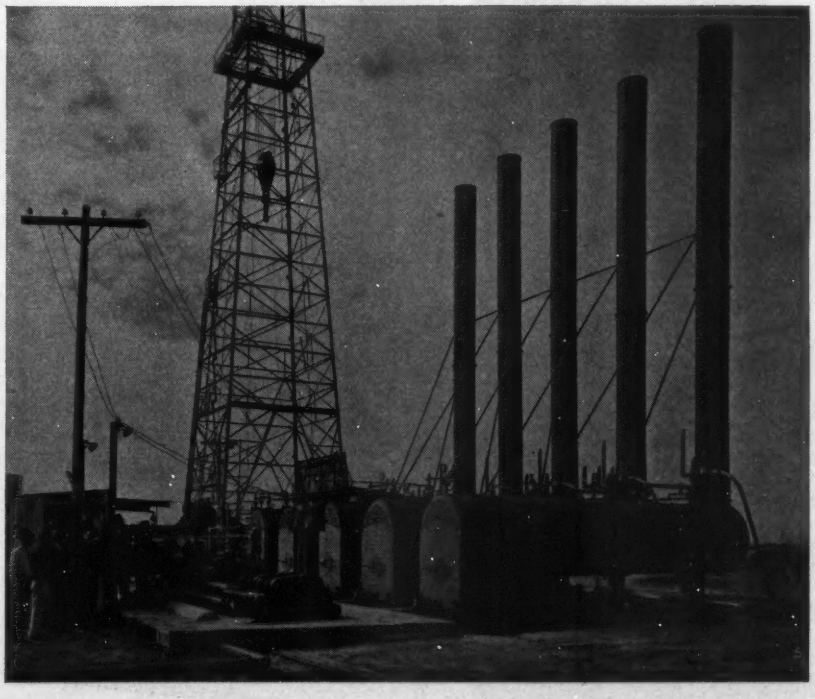
When you hear that Bill Keck, that is, Superior Oil Co., is doing something revolutionary in the art of drilling or completing a well, in geophysical exploration or in production, it is well to remember that many operators are successfully applying any number of "Bill Keck's Follies" in their own activities—after the final results come to light. So, unless the signs are all wrong, Moodie No. 1 and its super-equipment represent Superior Oil Co.'s "warm up" for the 17,000 plus feet deep test.

The derrick alone is of the usual Rio Bravo size and design. This is the 178-foot high M-M steel structure which most experts contend represents the maximum practical height. The 220-foot derrick which has been proposed in some quarters, it is held, would be of no advantage because with drill pipe now in use the stands would belly out to an extent which would prevent running in the hole. The derrick used in Moodie No. 1 has a vertical capacity of nearly a million pounds, a floor capacity of half a million pounds, and a capacity of half a million pounds for each of three setbacks.

A view of the power plant gives the first indication of the type of equipment which will be called upon for the tests which will make Wasco a relatively shallow venture. Five 500-pound Broderick domeless boilers with integral super-heaters, each rated at 130 H.P. at maximum working pressure, supplied steam for Moodie No. 1. The 500-pound steam drives the 15-in. x 14-in. drawworks engine and the 15½-in. x 9¼-in. x 22-in. slush pumps. The huge drawworks engine is rated at 1700 H.P. The drive to the drawworks is by two double chains instead of the single double chain. Special features of the transmission and drawworks will be covered at length further along in this article. A Fisher pressure reducing regulator on the steam line to the 14-in. x 7¼-in. x 14-in. mud mixing pump reduces the steam pressure from 500 pounds to 350 pounds. Safety and economy are assured for the steam plant by Pinkerton regulators which keep water at predetermined levels in each boiler. Johns-Manville insulation, and prefabricated manifolding by Crane Co. Each of the Turbolite turbo-generators is rated at 10 K.W. each. The Ideal boiler feed pumps, 10 x 6¼ x 10, are used two for boiler feed and one for wash-down.

The accompanying illustration shows the compactness of the super-drawworks and its design to assure wider visibility for the driller. The Ideal 23-10½-FE drawworks has a 40-in. double rotor Parkersburg hydromatic brake which is said to have 50 percent more braking capacity than the 40-in. single rotor hydromatic brake. To accommodate this brake the drawworks has a slightly different drum shaft, a skid base approximately 3 feet longer than formerly, and a sturdy steel cradle for supporting the brake. No torque arm is used. The derrick base must be 30 feet or more to allow sufficient space between the brake and derrick leg.

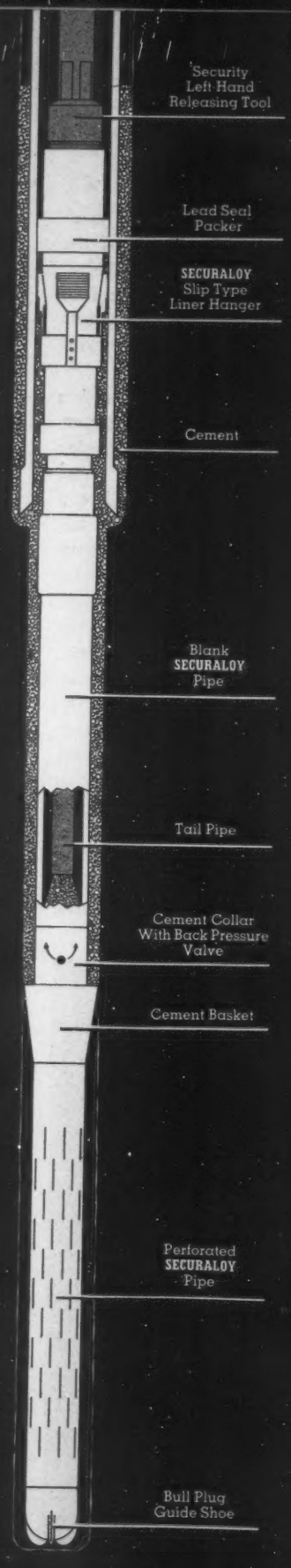
The new type brake is mounted on a separate 7⅝-in. shaft and is connected to the drawworks drum shaft



When wells are drilled four miles or more in depth, the power plant will probably look like this. Five 500-lb. working pressure boilers with integral superheaters operating super-engines and pumps.

NO. 6 OF A SERIES SHOWING HOW SECURALOY INCREASES DEVELOPMENT EFFICIENCIES

SQUEEZE CEMENTING LINER TOPS IS SAFE AND EASY THE SECURITY WAY!



When well conditions are such that a tight seal is required between liner and casing shoe but formations around the top of the liner are so broken up that ordinary cementing operations will not seal off the fissures, many operators find that a squeeze cement job around the top of the liner will solve the problem.

In this application SECURALOY pipe and Security accessories (especially the Left Hand Releasing Tool described below) are particularly valuable because they not only permit the job to be done faster and more efficiently, but the SECURALOY liner, being drillable, provides a safety factor of great importance. *When SECURALOY is used, the cemented-in liner can be completely and economically removed with an ordinary drilling bit at any time desired!*

This vital feature protects the oil well investment, making it a simple matter to carry out future development work without expensive and risky fishing operations to get the liner out.

A typical set-up for squeeze-cementing liner tops is shown at left. Read below how the Security Left Hand Releasing Tool increases the efficiency of these operations.

THE SECURITY LEFT HAND RELEASING TOOL

Here is the most efficient tool yet developed for setting liner screens, packers and similar equipment. It is positive and completely fool-proof in its action because *it automatically removes all weight from the releasing thread while backing off.*

Moreover, a ball thrust bearing device transfers the applied weight of the run-in string directly to the equipment being set without binding the releasing thread in any way. Therefore, as much weight as desired can be applied to hold the equipment in place without interfering with the back-off action, allowing unusually light liners and accessories to be set with the same positive efficiency as heavy ones.

A unique feature of the Security Releasing Tool is the built-in pack-off device which permits high cementing and circulating pressures to be established through the tail pipe connection without the necessity of using swab rubber pack-offs around the tail pipe. This feature, coupled with the positive releasing action, adds materially to the speed and convenience of the squeeze cementing operations outlined above.

Send for bulletin describing the Security Left Hand Releasing Tool. Also, if you desire more detailed information on the cementing operations outlined above or on any other SECURALOY application, our Engineering Department will be more than glad to cooperate with you in offering helpful suggestions. When writing please give full details on the particular operating conditions in your wells.

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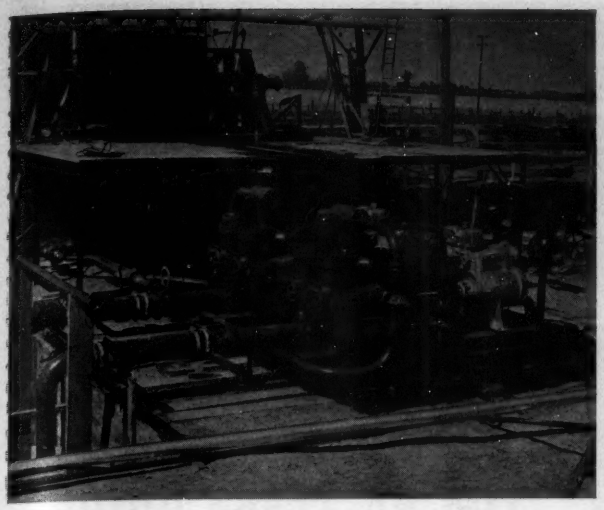

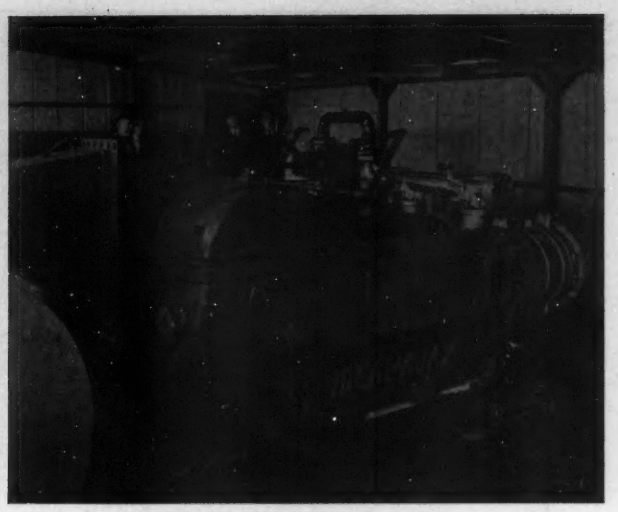

Here you have an indication of the size of pumps and engines described in the text.

with a No. 9 Fasts flexible coupling. At this connection the water for the water-cooled brake rims passes through a piece of steel in order to prevent water from getting into the oil reservoir between the coupling hubs and sleeve. The drawworks and brake weigh approximately 4410 pounds more than the single rotor brake installation. Another feature of the Moodie No. 1 drawworks is the Foster automatic cathead, mounted at the rotary drive end of the catshaft. A foot pedal for operating the automatic cathead is mounted adjacent to the rotary clutch pedal.

The BC 12 x 12 rotary drive machine is located under the derrick floor and is driven by a separate engine. The Ideal rotary machine, in this case equipped with spiral bevel gears, is known as the HS-20½ Type. The gear ratio of 2.76 to 1 is designed to permit a wide choice in the selection of rotating speeds by changing the sprocket or gear size. Speeds up to 350 R.P.M. are obtainable.

In the Moodie No. 1 rig the conventional rotary hook was replaced by a rotary connector. In this design the hook is eliminated and in its place is provided a yoke from which elevator links can be independently suspended. Drill pipe is handled in the usual manner and a special shank, easily attached to the swivel bail, provides a means of carrying the swivel with the regular elevator when drilling. The swivel is a recently developed Ideal with 5-in. fluid passages. The rotary hose is a 5-in. Chiksan steel hose 55 feet long The larg-

Surprisingly compact for its tremendous power is the super-drawworks. Note the new double-rotor Hydromatic brake.

3 reasons why you can buy Union Products with confidence

FOR 48 YEARS UNION HAS PIONEERED IN REFINING PRODUCTS FOR WESTERN USE

Union products are field and laboratory tested for *Western* construction operations...refined to meet the particular requirements of Pacific Coast contractors. Consequently, among veteran operators who know their maintenance costs, you'll find an ever increasing number who use Union products exclusively—first, because they're dependable and economical; and second, because no matter how large or small the order, Union delivers it *where* it's wanted, *when* it's wanted. There's a Union Oil Company agent in your district. Let him show you how Union products can cut *your* operating costs.

Quicker Starting, Smoother Running Diesel Engine Fuel

DIESOL is refined and transported under supervision that guarantees *uniform performance* from every tank-full you buy. Its high quality and purity gives you power and fuel economy that means maximum value from your fuel dollar.

New! Tougher, Longer-lasting Oil for "Caterpillar" Diesels

DIESO-LIFE—Union's sensational new oil for Diesel "Caterpillars." It's tougher, longer lasting. Keeps rings free, prevents blow-by, reduces liner wear, and means longer life for "Caterpillar" Diesels. Fully approved by the Caterpillar Tractor Co.

TRITON...Triton is propane-solvent refined, 100% pure paraffin-base motor oil. Cleans out carbon as you drive—changes p-i-n-g to p-u-r-r; saves carbon scrapes, saves gasoline, saves motor wear.

76...Today's 76 gasoline's the finest we've ever made. It combines everything you need in truck, tractor or car—smooth power, fast pickup, quick-starting and l-o-n-g mileage.

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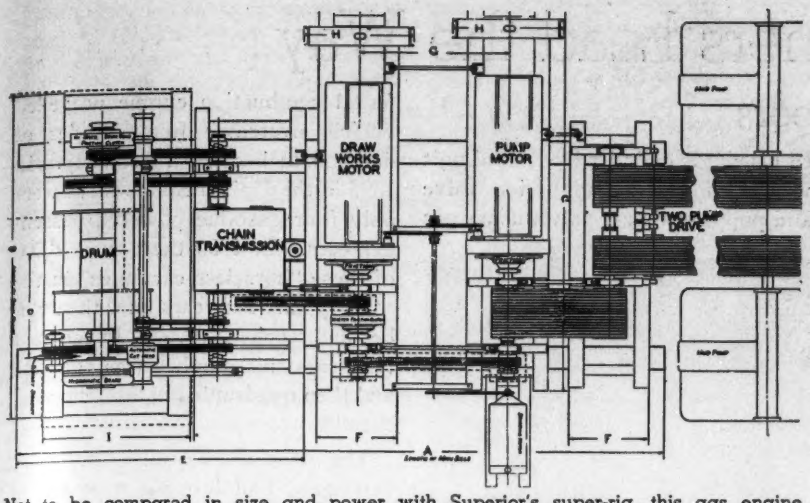
OWNED AND OPERATED FOR 48 YEARS BY PACIFIC COAST PEOPLE



Not to be compared in size and power with Superior's super-rig, this gas engine powered rig breaks records in Torrance.

est size "Blue Streak" (Jeffrey) shale shakers kept the return mud free of undesired materials.

Moodie No. 1 has been completed and no one can doubt that the driller's log is a subject of keen study by Superior Oil Co. When the well was half way down to its completion depth there were "observers" who said that at 12,000 feet there would be a changeover to 1¼-in. wire rope, a mere matter of new crown block, traveling block, drawworks drum, etc., then the hole would continue to 17,000 feet or more. It is possible that the sole object in using super-equipment was to straighten out a reversing curve plotted on a drilling-speed ordinate and cost of drilling abscissa.

Petroleum Contributes 4 Billion To U.S. Income

Contributions to the national income made by the petroleum industry in 1938 were at the rate of $3.40 for each of the 1,213,000,000 barrels of crude oil produced and at the rate of $4,150 for each of the industry's employes, according to preliminary estimates.

Total cash income added to the national economy by the production, refining, and marketing departments of the industry is estimated at $4,150,000,000, made up of pay rolls, taxes, royalty, lease and bonus payments, equipment purchases and railroad transportation charges.

Pay rolls and taxes were the two largest items contributed by the industry, with pay rolls approximating $1,500,000,000, and taxes paid to federal, state, and local authorities amounting to about $1,300,000,000.

Other items making up the total include $200,000,000 for royalties, lease and bonus payments; $875,000,000 paid to other industries for equipment, supplies and service, and $275,000,000 paid to the railroads for transportation charges.

Directory Erratum

In the California Oil World Directory appears the following listing:

"Wallace, Robert and Cord, E.L., % Robert Wallace, Ambassador Hotel, Los Angeles, California."

This publication is just in receipt of a letter from Mr. Garnet C. Rainey, attorney for Mr. E. L. Cord, in which we are advised that there is no connection between Robert Wallace and E. L. Cord.

Directory Well Received By San Joaquin Valley Men

Meeting an excellent reception in the San Joaquin Valley is the new Directory just published by California Oil World. Its many pages of oil field maps, together with the large amount of engineering and statistical data make the volume more than just a complete list of California oil companies and individual operators. For the convenience of San Joaquin Valley oil men, arrangements have been made for distribution of the book by Earl M. Price & Co. in Bakersfield and by the Daily Midway Driller in Taft.

Elk Hills "Cat" Below 9000 Ft.

Located a mile east of the Town of Tupman and a mile and a half northwest of the Richfield-Western producing area, Standard Oil Co.'s KCL No. 2-1 is drilling below 9100 ft. in hard brown shale.

HOWARD SUPPLY

Service All Hours
We Never Close

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Bailey Pressure Controls
Bonney Weldolets, Threadolets
Burns Pilgrim Liner Hangers
Byron-Jackson Tongs, Tubing Catchers, Elevators
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Cosco Pump Parts
Crown Hydraulic Pumping Units
D & M Pistons, Rods, Liners
Edwards Wire Rope
Howard Production Crowns
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Hughes Bits—Tool Joints
Kropp Forged Flanges, Welding Nozzles
Link-Belt Rotary Chain, Mud Screens
Manhattan Mechanical Rubber Goods, Rotary Hose
Marsh Gauges
Mills Bull Plugs, Swage Nipples
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Petroleum Refiners Lead the Way

For Automotive Engineers

Because he devised a safe method of disposing of the gasoline fraction, a pioneer refinery worker was rewarded by a grateful company. Gasoline was not merely a waste product, it was a hazard whose history written in domestic and industrial disaster threatened to destroy the rising competitor to coal oil and whale oil: kerosene. This is not ancient history. The refinery worker who proudly donned the new suit of clothes that his ingenuity had merited is now the top executive of one of the largest, if not the largest, oil companies in the world.

In the first decade of the 20th century began that reversal in the valuation of the light fractions of petroleum which was to prove so complete that a costly process has been devised whereby 50 gallons of crude oil are converted into 55 gallons of motor gasoline of the highest quality for internal combustion engines.

From the time that the first internal combustion engine was tested in 1678 by Abbé d'Hautefeuille, using gunpowder as fuel, to 1877 when Nikolaus August Otto demonstrated his single cylinder horizontal unit with sliding plate admission valve and poppet exhaust valve, using gas

Eugene J. Houdry

for fuel, is a 200-year period of snail-pace advance. From Daimler and Benz in 1866 to the automotive output of 1939 the gasoline fueled internal combustion engine propelled vehicle overcame four decades of derision to become a necessity. In 1895 in the United States there were only four gasoline powered passenger cars.. In 1900 there were 8,000 of these "horseless carriages" in the country, and ten years later the number had reached 458,500. In the next ten years this number was doubled, and then quadrupled in the following decade.

The Benz and Daimler "horseless carriages" had internal combustion engines which employed the Otto four cycle principle, water jacketed cylinders, electric ignition, aspirating carburetor, cone clutch, and sliding-gear change-speed transmissions. In the United States George B. Selden filed application for patents on a similar vehicle. What is thought to be the first American-built gasoline carriage was that of Charles E. and Frank Duryea in 1892. Haynes, Winton, Apperson, Olds and Ford followed with their models.

Without the gasoline and lubricants provided by the petroleum industry, there would be no automobile industry as we know it today. The gasoline service station was invented along in 1910 and the mail order business in gasoline went into a slump. Today a region may be considered uninhabitable or impenetrable if there are no service stations there.

The petroleum industry continues to make it possible for automobile manufacturers to make better cars with each new model. The gasoline of 1920 would be unfit for the automobile engine of today. The greases and oils of 1920 would soon wreck the hypoid gears and close clearance metal surfaces of today's automobiles. Many of the gasolines and lubricants which motorists are buying today are made for the greatly improved machines of tomorrow. The petroleum refiner leads the way and the automobile manufacturer follows with little lag.

There are various accounts of the origin of "cracking," the first real achievement of the refiner in his efforts to manufacture motor fuel, not merely separate it from crude oil by distillation. The earliest patents are those of Dr. Burton of Standard Oil Co. (Indiana).

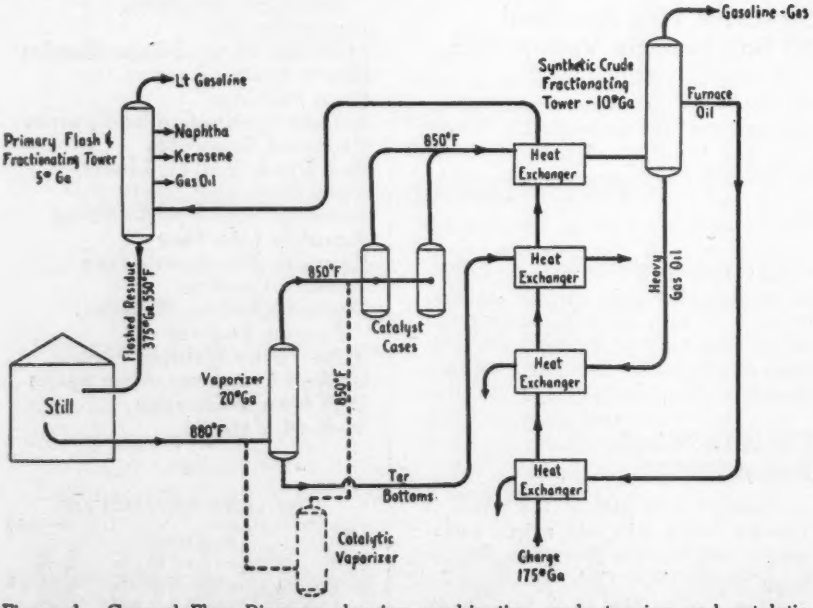


Figure 1. General Flow Diagram showing combination crude topping and catalytic cracking process.

Among the processes in which the heavier hydrocarbon molecules were cracked or broken down into lighter hydrocarbon molecules composing gasoline are the Dubbs, Cross, Isom, Holmes-Manley, Gyro, Tube and Tank, Jenkins, Black, Winkler-Koch, Flemming, Single coil and Burton. Most of these are in use today with improvements added from time to time

Hydrogenation, a process whereby high carbon ratio molecules are caused to take hydrogen atoms into their structure to produce the lighter hydrocarbons which make up motor fuel, was successfully accomplished in 1915 by Dr. F. Bergius in Germany. Germany had no petroleum resources, but considerable coal deposits. Dr. Bergius' "refinery" included a plant for the production of hydrogen from gas. This hydrogen and a mixture of equal parts of coal and heavy oil were pumped into a reaction vessel at a pressure of about 3000 pounds per square inch and a temperature of 842° F. A small amount of tin sulphide is mixed with the coal to serve as a catalyst. The process required two hours, at the end of which 75 percent of the coal was converted into a heavy oil similar to petroleum and 25 percent into gaseous hydrocarbons.

The petroleum industry as a whole became interested in hydrogenation in 1929. I. G. Farbenindustrie and Standard of New Jersey brought the process, as applied to petroleum, to the United States.

The next major step toward the development of the ideal motor fuel was the process known as polymerization. One of the commonest examples of polymerization is the product Bakelite. Phenol, generally labelled "carbolic acid," is a liquid, and formaldehyde is a gas (the aqueous solution is a well known preservative). The gas and the liquid are combined to form the solid Bakelite. While condensation, chemically, is the name applied to another type of merging reaction, that, in a way, is what happens in polymerization. The two different types of molecules in phenol and formaldehyde redistribute their atoms to form a more massive molecule. In the polymerization of a gas, the gas molecules combine with each other to form the heavier molecules of butane, pentane, hexane, heptane, octane, etc., which make up motor fuel.

The latest advance toward the ideal motor fuel is known under the general title: "Catalytic Cracking." A paper published at the close of 1938 describes the Houdry catalytic processes for petroleum hydrocarbon refining, involving complete catalytic operations for production of high octane motor fuels and aviation gasolines by cracking of gas oils, residuums, and crude oils with or without fuel oil production. Presented at the annual meeting of the American Petroleum Institute, this paper caused considerable excitement in the industry. With Standard Oil Co. of California preparing to bring the Houdry process to the Pacific Coast, and with other large companies in this territory seriously considering the process, the author's description of the process may be of particular interest here.

Figure 1 is a flow sheet showing the general steps used in processing a crude oil running to fuel oil, with one pass through the catalyst, and with the removal of straight-run products optional. The dotted line indicates the flow if desired to run to "no residuum." As shown in the flow diagram, crude oil is pumped through heat exchangers, wherein it is preheated by the products from the catalytic cases; thence to a primary flash fractionating tower, wherein the desired straight-run products are fractionated and removed. The residue from the flash tower is pumped through a still, heated to approximately 880° F., depending on stock, thence into a vaporizer. Tar bottoms are removed as a liquid, and the vaporized fractions of the charge pass to the catalyst chambers. From the catalyst chambers the vapors pass through the crude oil exchangers into the final fractionating tower, wherein gasoline, furnace oil, and heavy gas oil are separated, the latter two being combined, if desired, for recharge to catalytic or thermal

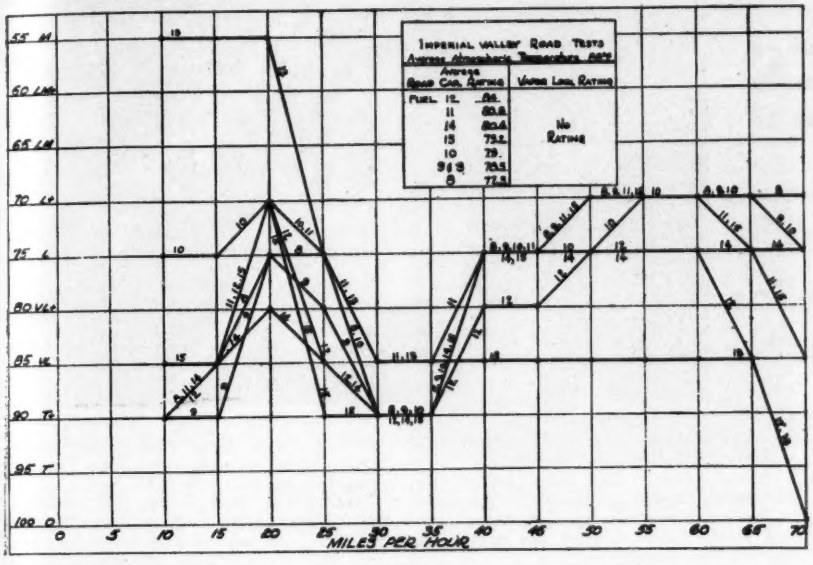


Figure 2

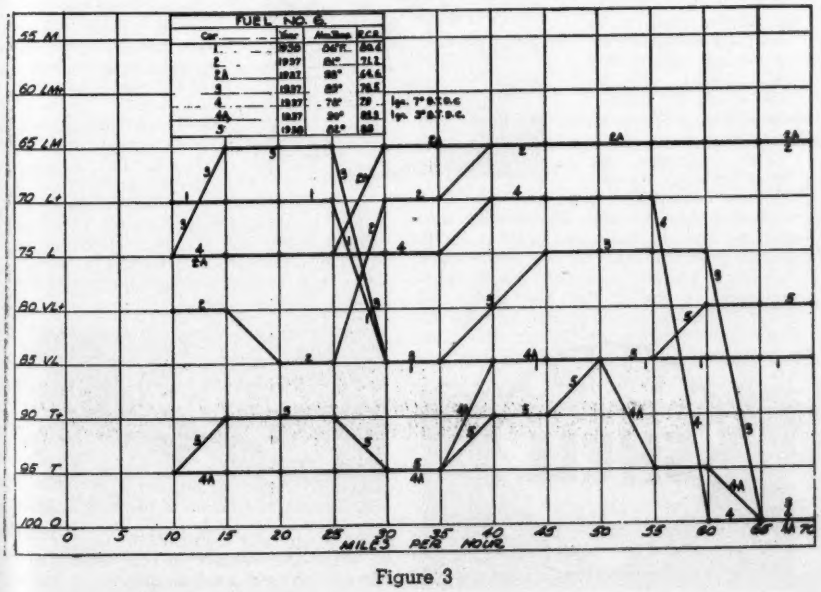


Figure 3

This is a reprint of an advertisement released by Shell to leading newspapers to help acquaint the public with Shell's activities in the Petroleum Industry.

Here's SHELLMAN JOHN JONES

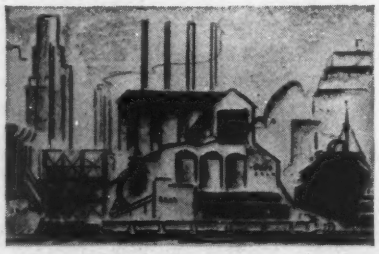
What's he ever done for American Business?

MAYBE *this* John Jones operates a station where Shell products are sold. He's the man who fills your gasoline tank, checks the oil, cleans the windshield.

But he contributes more than that to American industry and business.

John Jones is typical of more than 27,000 people in the United States who compose Shell's production, refining and marketing organization. He's representative of the organization that produces 48,000,000 barrels of petroleum a year. And he and his fellow workers have done plenty to make life better for their countrymen.

These Shellmen make economical fuel available for gasoline engines. They've developed effective lubricants to keep up with the advancement of the high-speed engine. They've supplied one of the reasons why millions of American families can afford to own modern cars for their pleasure and



recreation; why commercial concerns transport people and goods inexpensively in fleets of passenger cars, buses and trucks; why the United States leads the whole world in the development of commercial-aviation equipment, construction and design.

In the industrial field, John Jones and his co-workers furnish petroleum fuel for power —the power that runs mills, factories, lighting plants, marine engines and streamlined trains. They provide lubricants for every kind of engine from a pocket watch to a locomotive. In textiles, steel, paper, and food manufacture— in mining, construction, road-building, wherever the wheels of industry turn, Shell products are at work.

The versatile Mr. Jones has made his contribution to American home-life, too. He's there at your door with domestic fuel oil, kerosene, liquefied gas to furnish household heat for city and country families alike. He has a polish for Mother's furniture, a cleaner for the mirror on Sister's dressing table and one to take the spots off Dad's vest. And when Brother leaves the screen door open, John Jones is Johnny-on-the-spot with a fly spray.

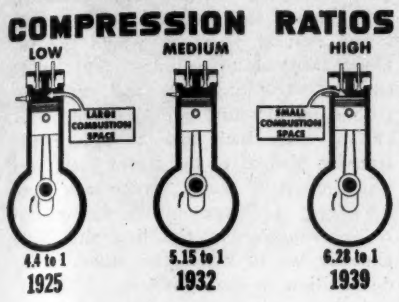
Behind John Jones and his fellow-workers are Shell's many resources—thousands of producing oil wells, busy refineries, the finest of technical laboratories, a nation-wide distribution system.

Behind him, too, is a company policy that gives him both the opportunity and the incentive for good citizenship. He's directly interested in the development of the community where he lives. His pay is always sufficient to maintain a respectable standard of living; he gets enough time off to spend with his family and with his friends, and to participate actively in community affairs. He is provided with insurance protection for himself and his family.

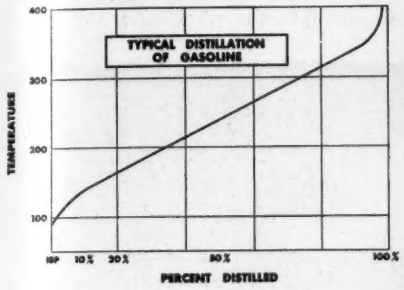
SHELL

He is carefully instructed in safety, and he keeps the rules. He's courteous and reliable. *He's a good neighbor.*

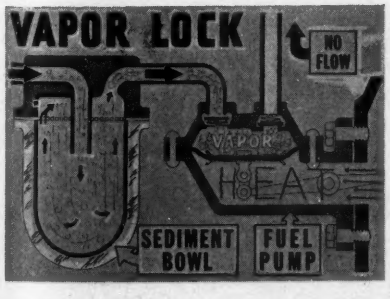
cracking operations. If gas oil is charged, the flash tower and the vaporizer are eliminated, the charge being pumped through exchangers to the still, and



thence direct to the catalyst. If a residue is to be charged, the primary flash fractionating tower is eliminated, the charge passing direct to the still, and thence to the vaporizer for tar separation.



To eliminate fuel production, the charge from the still is charged to a vaporizer, wherein, through a special catalytic mass, the entire charge is vaporized and passed to the catalyst. In special cases it is advisable to charge the entire crude to the catalyst without removal of straight-run products. The flow arrangement for this operation is the same as described for residues. Many variations in flow are possible, but the above are the principal ones.



In general, the yield of gasoline will be about 45 percent, based on charge to the catalyst, from a single-pass operation on any stock, whether gas oil or residue. The octane number of the gasoline produced from any charging stock heavier than gasoline is from 77 to 81 for 437 e.p. gasoline. Octane numbers by the research method will run 7 to 10 points above these figures. The octane value does not change to any appreciable extent with boiling points, and these values are obtained regardless of type of crude. Lead susceptibilities and blending values are high. The blending value of Houdry with straight-run gasoline is usually 4 to 10 points higher than the actual octane number. Unless otherwise noted, all references to octane value are on the basis of ASTM motor method rating.

Catalytically produced gas oils again can be cracked by the catalytic operation; and the yield, while lower than

Many gasolines, known only by numbers, are used in Road Tests.

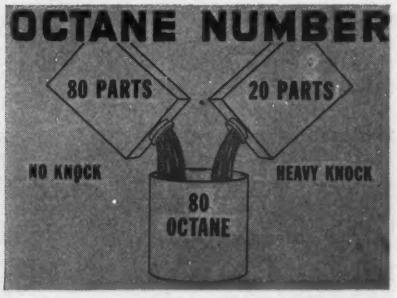
obtained on virgin gas oil, is higher, pass by pass, than is usually obtained by the thermal unit. Catalytically produced gas oils make excellent charging stocks for thermal cracking units.

An outstanding feature of these catalytic operations is their ability to produce aviation gasoline. It is believed by the authors that the manufacture of aviation gasoline by this process (7,000,000 gallons in 1937-38) represents the first commercial application of a synthetic process for aviation fuel production. Finished Houdry gasoline (aviation) will be 87, 90, and 92 octane number with 1.8 m.l., 3 m.l., or 4 m.l. of tetraethyl lead per gallon, respectively. When used for blending with iso-pentane, iso-octane, and similar anti-knock agents, 100 octane grade fuel, after addition of tetraethyl lead, is produced.

To date more than $11,000,000 has been spent in developing the Houdry process, and three times this sum is being spent currently in the construction of Houdry plants. Research and development work on this process is continuing at a cost of $2000 to $2500 a day. One-third of the stock of Houdry Process is held by Eugene Houdry and 600 of his countrymen in France. The remainder of the stock is held by Socony-Vacuum and Sun Oil Companies. E. B. Badger & Sons construct the Houdry plants, while Houdry Process sells the licenses and the catalyst.

Early in 1939 it was announced that Consolidated Oil Corp. Shell Union Oil Corp., and The Texas Corp., are planning immediate large scale installations to use a new catalytic process developed by Universal Oil Products Co., owners of the Dubbs thermal cracking process.

The new process, it is said, will produce a new type of gasoline, and the process bids fair to revolutionize the petroleum industry because it operates



on newly discovered principles. Thermal cracking is a forcible process. Great heat, applied while the oil is held under heavy pressure, splits (cracks) the heavy molecules apart to make motor fuel. Catalysis, a potent but gentle force of nature, has been harnessed, Universal's technogolists say, so that oil is now vaporized and the vapors passed over the surface of the catalyst, coaxing the oil molecules apart, with a high degree of selectivity and at great speed, rearranging them in the manner desired to make a kind of gasoline that it has been impossible to make in large quantities before.

In order to show the vast importance of the new process, Universal's experts say, the following facts may be considered: The thermal cracking process produces from gas oil yields of 70 to 75 percent of gasoline of 72 octane rating. The new catalytic cracking process produces 85 percent of gasoline of 81 octane number or higher. In fact, 100 octane rating gasoline can be made at will.

There has been some concern, says Universal, as to where sufficient supplies of the proper aviation gasoline were to come from. This anxiety has been heightened since President Roosevelt has recommended about a 20-fold increase in the number of American fighting airplanes over the next few

years. The best and most efficient airplane motors today demand gasoline of 100 octane rating. Now a plentiful supply of aviation gasoline is assured. Catalytic cracking can make it. In fact, by the use of the new process, together with existing cracking equipment, all demands for automobile and airplane gasoline can be completely met for the whole world from the crude reserves available in the United States.

The cost per mile of operating with the new gasoline will be in line with present motoring and flying costs. A new era in automobile design may lie immediately ahead because the superior characteristics of the new fuel will spur automobile engineers to design and build far better automobile engines than we know today. While the new process is a milestone in the scientific achievement of the oil industry, it will at present supplement rather than replace the present cracking equipment which represents an investment of more than $400,000,000.

How do modern motor fuels and modern automobile engines compare with the fuels and engines of, say, twenty years ago? The old gasolines had high endpoints and initials and were suitable for operation under favorable conditions of temperature. The ordinary cycle of operation included numerous overhauls because of excessive carbon deposition, corrosive elements, overheating, fouled plugs and valves, etc. This early gasoline caused detonation, or knocking, in all but the lowest compression ratio engines. Knocking cuts the useful work of the ignited gasoline-air charge by 25 percent, therefore, the automobile manufacturers were limited to the construction of the inefficient low compression ratio engines. If the modern automobile engine were able to operate at all with the old gasoline, it would sound like a threshing machine in full flight.

With the introduction of the self starter and the fully enclosed body, the automobile ceased to be an awkward substitute for the horse and buggy. The driving season was extended into the cold months and the necessity for motor fuels which would vaporize in cold weather arose. The service stations began displaying "High Test" placards, and gravity shot upward. There followed several years in which the refiners worked to stabilize the "wild" ends of their gasolines, and the automobile manufacturers changed the layout of their fuel lines to reduce the transfer of heat to the motor fuel. This was the period when "vapor lock" was the great problem. The motor fuel would vaporize in the line and little gasoline would reach the manifold for distribution to the cylinders.

Automotive engineers knew that they could obtain greater power and work from a given quantity of gasoline if they could increase the compression ratio of their engines. However, some 25 percent of the gasoline-air charge in the cylinder was exploded prematurely by the higher pressures and this energy was dissipated in vibration or shock and

Improved gasolines and engine designs make desert driving trouble-free—Soon nearly all automobiles will be air-conditioned.

The California Oil and Gas Association "Says"!

CALIFORNIA OIL WORLD DIRECTORY

The following appeared in the Weekly Review of May 19th of the California Oil and Gas Association:

"A QUICK, ready reference bringing to oil executives important facts, figures and personnel information, plus 36 pages of California oil field maps,—that essentially is the first edition of the California Oil World Directory, just off the press. About 85 pages are devoted to a register of California oil operators. This register includes post office addresses for all the companies listed and certain additional information for many of the companies. Data for larger companies include date of incorporation, date of annual meeting, capitalization, par value of shares, officers, directors, executives, location and extent of properties, approximate annual production, refineries, pipe lines, marketing facilities, and even telephone numbers. About 2500 companies are listed.

"The maps are clear and clean. A number of them are on sheets larger than the normal page size, and consequently are folded in. Since the normal page size is 9 x 12 inches, details are registered without difficulty. Twenty-six maps are included, all numbered and ingeniously indexed in a special section. Another section sure to win favorable comment is that devoted to California oil field records. Each field is treated separately, though the fields are listed alphabetically within the three usual divisions of the state: Los Angeles Basin, Coastal District, San Joaquin Valley. Information includes year of discovery, type of structure, proved acreage, wells producing, and wells shut in. Then follows for each field a year by year record of total production, daily average production, wells completed, and daily initial output.

"The Statistical section includes tables and charts on many subjects: number of workers and payrolls, production by fields, production summary by months, potentials, gas field data, gas production and disposition, posted crude prices, crude reserves, refinery consumption and production, refineries, cracking plants, natural gasoline plants, tanker and package shipments, exports to Japan, sales by leading marketers, and various engineering tables for field men. The last-named tables include such subjects as volume and height filled for various diameters, tubing sizes and volumetric capacities, volume and height filled between casing and hole, casing sizes and volumetric capacities, pump efficiency, cement retainers, cementing pressures, tank measurements, and others.

"The book is well planned and executed and should be well received. It has an original style about it that should quickly win it a place in the industry.

"California Oil World Directory." Bound in cloth, 176 pages, illustrated with maps, charts, and graphs. Published by California Oil World, 714 West Olympic Boulevard, Los Angeles. Price $5."

1939 ANNUAL

CALIFORNIA OIL WORLD
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The Lummus Company is now licensing agent for the Perco processes, and also offers the *Sulphuric Acid Alkylation Process.*

Perco Catalytic Desulphurization

For the economical removal of sulphur from gasoline, solvents and kerosene; increases octane number and reduces lead requirements.

Perco Catalytic Dehydrogenation

Raises the octane number of low octane naphtha and reduces the sulphur content—in one operation.

Perco Copper Sweetening of Gasoline

Reduces chemical costs; gives higher octane number; decreases lead requirements; lowers product losses; gives better color and gum stability.

In addition to the above processes, for which it is licensing agent, Lummus now offers to licensees, under the patent rights of Shell Development Company, Texaco Development Corporation, Standard Oil Development Company and Anglo-Iranian Oil Company, Ltd.—

The Sulphuric Acid Alkylation Process

Using cold concentrated sulphuric acid as catalyst for production of 90 to 100 octane number product for aviation gasoline from iso-paraffins and unsaturated hydrocarbons. The process gives high yields and shows excellent realization with low investment and operating costs. The Lummus Company is experienced in the design and construction of sulphuric acid-light hydrocarbon units . . . *and is at present building a large Sulphuric Acid Alkylation plant for a major oil company.*

Wire or write for further data on these processes or for information concerning the design and construction of plants.

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PETROLEUM REFINING PLANTS

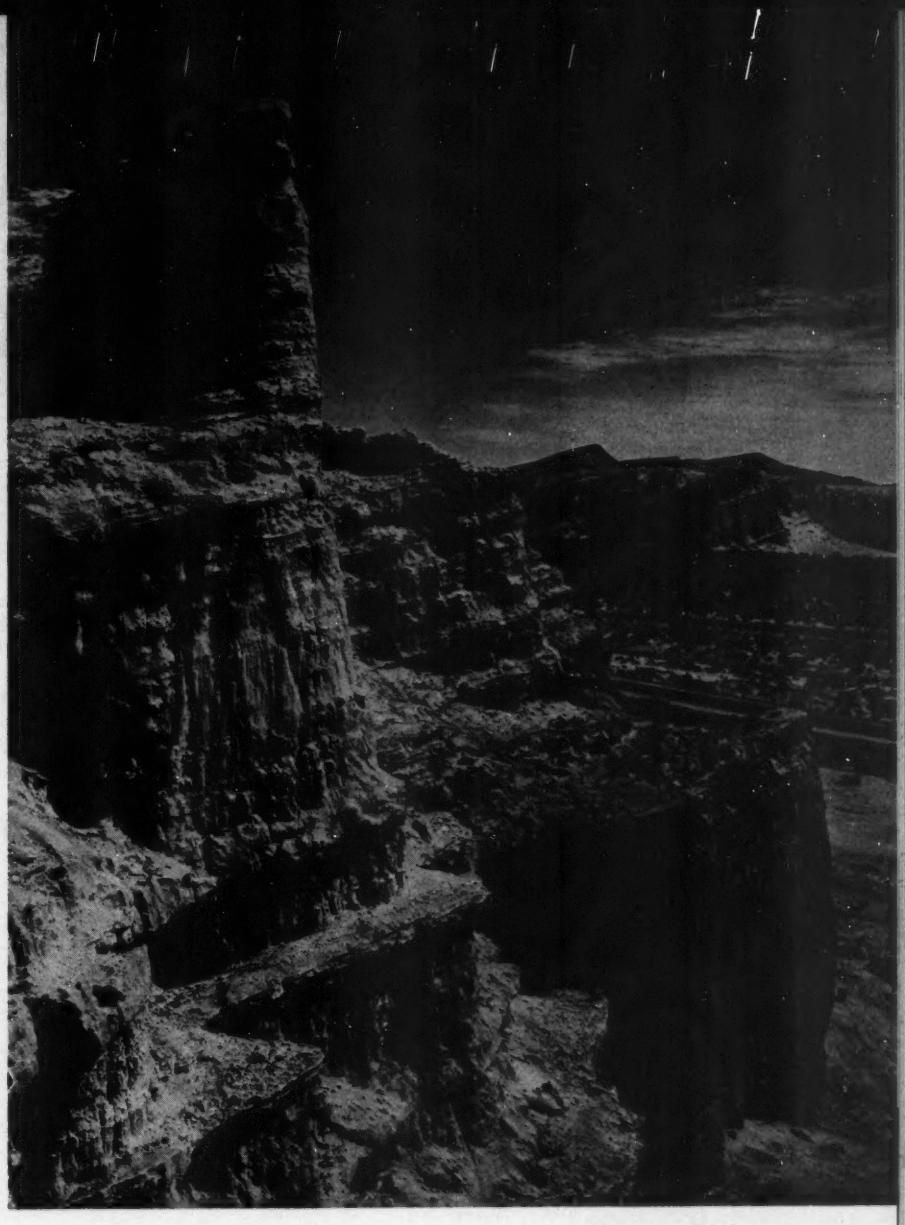
was not applied to useful work in moving the piston. The problem was to find a motor fuel which would not detonate under the pressures built up in the higher compression engines. The line of flame propagation would follow smoothly from the electric spark to the farthest point of the cylinder periphery, the gas expanding at a uniform rate to provide a non-shocking impulse on the piston. The measure in which a motor fuel performs this ideal service in the cylinder is rated in Octane Numbers. Motor fuel of 100 Octane Number will give smooth power in the highest compression engines in use today. The engines of tomorrow may require a still higher Octane Number gasoline.

2-2-4 trimethyl pentane, iso-octane to most of us, the anti-knock agent, is blended with proportions of heptane, a hard knocking hydrocarbon, to match the knock performance of a gasoline. If a blend of 60 percent iso-octane with 40 percent heptane matches the gasoline being tested, the Octane Number of the gasoline is 60. A gasoline of 80 Octane Number, similarly, will match the knocking characteristics of a blend of 80 percent iso-octane and 20 percent heptane.

It was early discovered that iron carbonyl and aniline, as well as benzol, would increase the anti-knock rating of gasoline. The most important additive, however, was that developed by Ethyl Gasoline Corp., and introduced by Standard Oil Co. (Indiana), tetraethyl lead. Up to this time "cracked" gasoline was in bad odor (in more ways than one), and refiners were glad to get rid of it at prices under the straight-run gasoline market. Now, however, the high anti-knock value of cracked gasoline quickly made it a premium product, and processes for improving color and odor, inhibiting gum formation, and conserving knock rating, were speedily devised for cracked gasoline.

Figures 2 and 3 are highly illuminating. Figure 2 indicates the performance of nine different gasolines in one of the low price range automobiles at different speeds. It is interesting to note that the gasolines which gave only a slight or light trace of a knock at speeds up to 35 miles an hour were those containing large proportions of cracked gasoline. The gasolines in which the knocking tendency decreased at the higher speeds were those to which tetraethyl lead had been added. This automobile proved a severe test to the gasolines, as the curves indicate. The gasolines which showed the best overall performance were those containing stabilized light ends and polymer gasoline.

Figure 3 shows the performance of one gasoline tested in five different makes



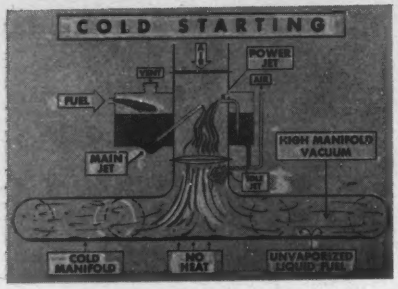
Swift changes from high to low altitudes once made a lot of difference to the engine. Scientifically blended gasolines have come to the motorists' aid.

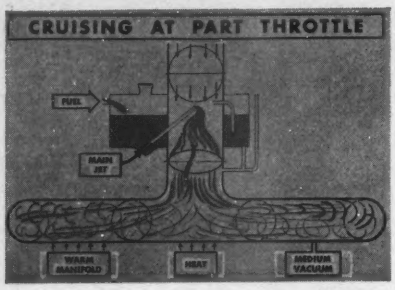
of automobiles. Cars numbers 2 and 4 were tested under two different conditions of temperature. All of these cars have engines with top compression ratios. Differences in performance would indicate that some of the automobile manufacturers are in much closer rapport with the petroleum refiner than others. These, and other charts appearing here, were derived from data compiled by Richfield Oil Corp. engineers when that corporation was seeking to produce the ideal motor fuel at their new $5,000,000 refinery at Watson.

An indication of what the young refiner should know about motor fuels and internal combustion engines is given in the road test equipment used by Richfield's engineers. On each of the automobiles tested a potentiometer through thermocouples registered the temperatures at the carburetor bowl, fuel pump inlet and outlet, water in the cylinder block, crankcase oil, carburetor air intake, gasoline tank and the prevailing air temperature. A Sling psychorometer indicated the percentage of moisture in the air; a barometer showed atmospheric pressure, and a Richfield exhaust gas analyzer was used to check the carburetor mixture. A Tapley performance meter measured the accelerating power; a gauge indicated the vacuum in the intake manifold, and a stop watch was used to check the rate of acceleration.

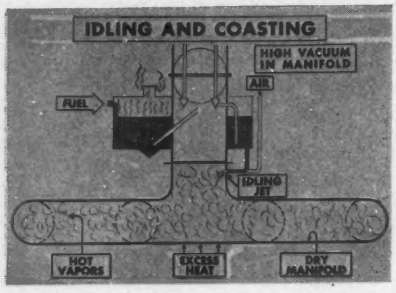
A decided trend toward leaner mixtures for part-throttle operation, say Richfield engineers, has occurred in the past two years. Better mixture distribution, higher compression ratios, more complete scavenging of burned gases and lower engine friction due to smoother metal finishes has permitted much leaner cruising mixtures. Power is sacrificed for economy during normal driv-

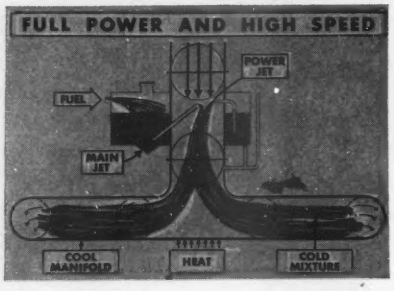
ing. When maximum power is needed, the accelerator pedal must be depressed fully, for that is the only method of opening the power faucet in the carburetor. Women with high heels have





considerable difficulty in opening the throttle wide open, due to awkward leg position and stretching of the toes, and this results in their accelerating with too lean a mixture, resulting in detonation or knocking. Power jets are made excessively rich in order to reduce knocking by chilling the mixture temperature





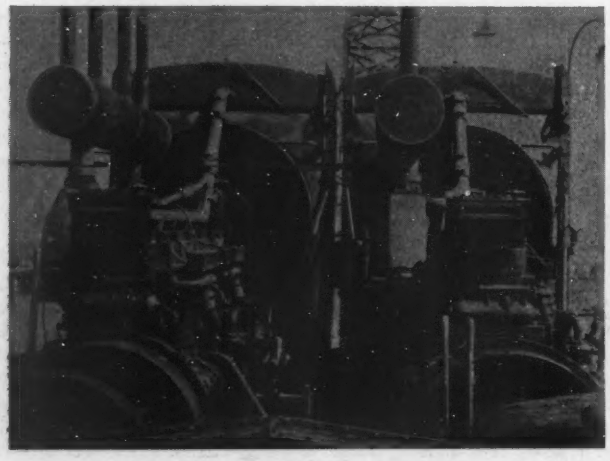
and by slowing down the rate of burning.

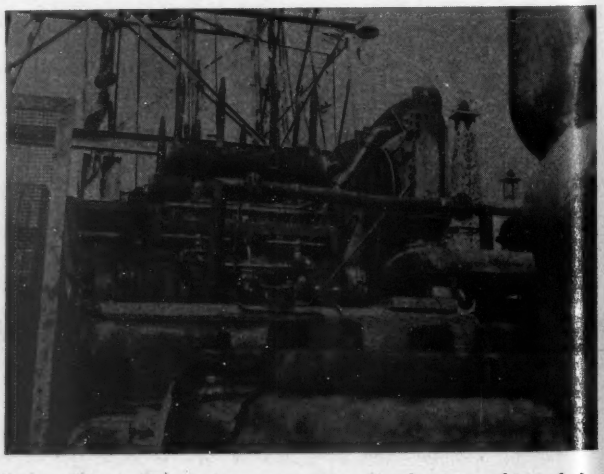
Complaints on knocking, these engineers say, come from many causes, not all of which can be held against the fuel. It is common to find knocking in cars which use two or more quarts of makeup oil every 1000 miles. Carbon builds up on the combustion chamber surfaces to such an extent that the compression pressure is increased as much as 20 pounds, and the surface heat contributes to self-ignition of the yet unburned gas after spark ignition begins. The quickest way to remove this difficulty is to burn out the carbon with oxygen. Knocking does not always occur in all cylinders at once. An incorrectly set spark plug gap, or a local hot spot in one cylinder can cause it. A leaking valve, or broken cylinder head gasket can run one or two cylinders so lean that they overheat and then start to detonate.

Sometimes a spark plug gasket is not properly chosen. The degree of tightness of the spark plug on a solid copper gasket changes its heat range about one step. If loose, the plug runs hot and causes pre-ignition; if too tight, the plug runs cold and fouls up and misses. Detonation is also caused by a combination of too far advanced spark in combination with a rich mixture due to unequal mixture distribution between the different cylinders. In some cases, carburetor jets are replaced with smaller ones to improve the mileage and the spark advanced to improve performance in a locality at from 1000 to 2000 feet altitude. When the car is driven at or near sea level, the higher compression pressure due to greater atmospheric pressure causes excessive fuel knock.

It is generally believed that today's automobile engines are valve timed and develop compression pressures requiring premium fuel to obtain maximum performance. However, it is also true that carburetor calibrations, ignition advance, spark timing, vacuum retard, spark plug heat range, manifold heating, and automatic choke settings are calibrated for "popular priced" non-premium gasoline.

In cold starting, because no heat is yet available, suction or vacuum created by the cylinders must pull light vapors from the cold gasoline taking it to the intake manifold with the automatic choke closing off the outside air during starting, and with the throttle automatically opened to a "fast idle" position. Under atmospheric pressure the gasoline will not vaporize at temperatures below its initial "boiling" point. When the starter turns the engine over vacuum in the intake manifold sucks fuel out of both the idle jet and main jet in the carburetor. In certain models the power jet also operates on starting. The rich fuel mixture passes around the slightly opened throttle plate and goes into the cold manifold which runs a high vacuum. The cold vapors pass into the cylinders, leaving a large





Butane and Diesel engines of 350 h.p. are gaining favor among drillers. These Waukeshas set new records in making hole.

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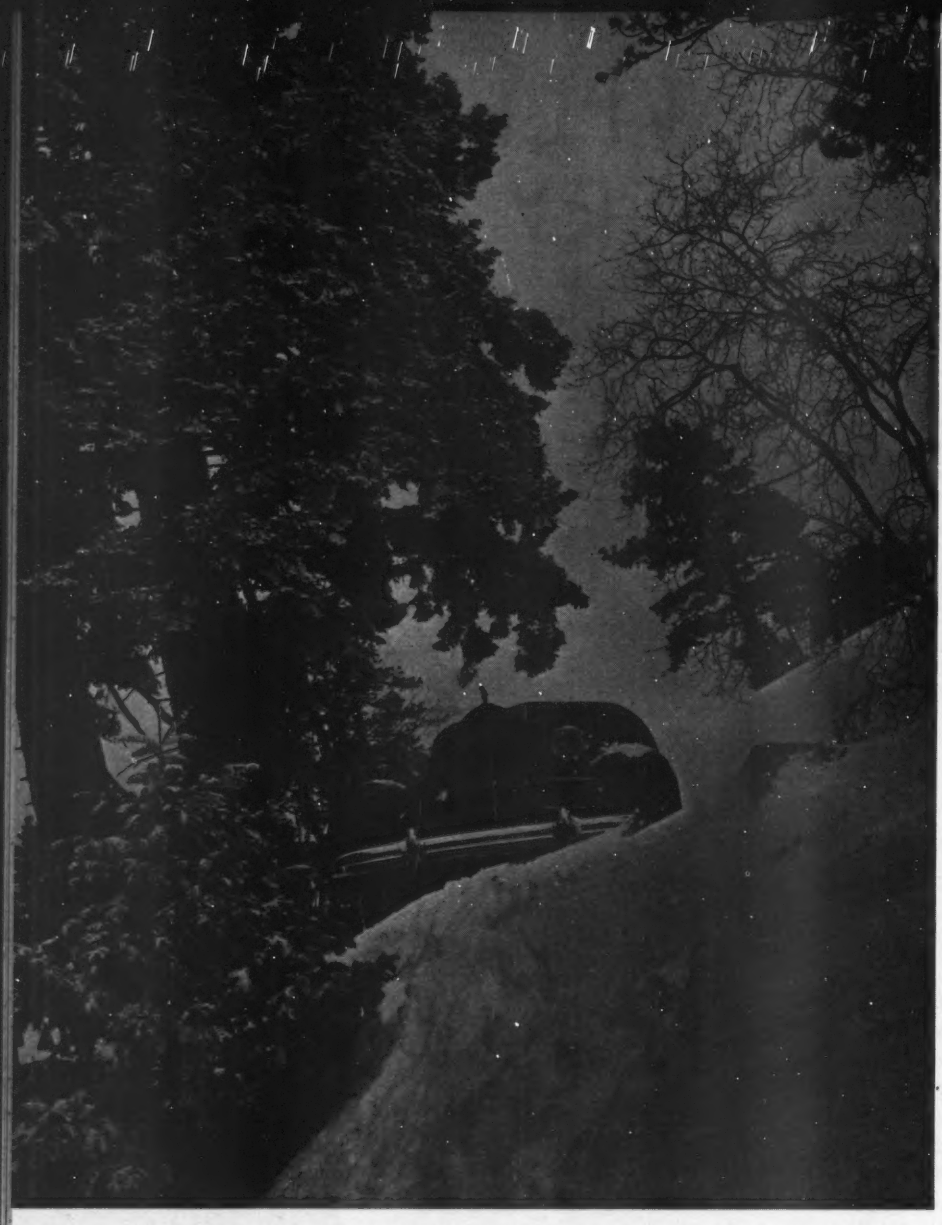


Remember when winter meant storing the car? In Southern California you have your choice of climate and the modern gasolines and engines will take you there.

amount of cold, unvaporized liquid fuel in the manifold.

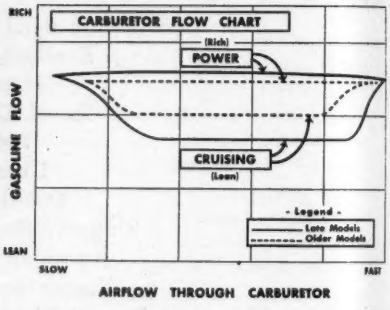
As exhaust heat increases the hot-spot temperature more and more of this liquid fuel is vaporized. At starting the vapors will be 40° F. or less. As the engine warms up completely, this temperature rises to over 200° F. during idling. During the warm up period, the choke slowly begins to open, automatically being controlled by a thermostat located in the exhaust manifold. This closes off the fuel coming from the main and power jets in the carburetor, and causes the idling jet to open more and more until this jet furnishes all of the fuel.

Many operators attempt to accelerate a car at 20 miles an hour only to find that the car first jumps ahead, then coughs and stops or stutters along roughly until the speed increases and the engine finally smooths out. This is characteristic of a cold manifold and a drop in the vacuum by the opening of the throttle plate. The vapors recondense in the manifold and the cylinders receive an extremely lean mixture. Idling mixtures are relatively rich, and in some cars, continue to supply a diminishing amount of fuel as high as 35 miles an hour. The main jet starts at about 20 miles an hour and increases the flow as engine speed increases. The power jet supplies fuel at or near full throttle. The accelerating pump squirts a sudden rich charge into the manifold for quick pickup without "spitting back."

Fuel, Richfield's engineers point out, is wasted anytime the throttle is unnecessarily "gunned" and economy is lessened anytime the throttle is held open longer than needed. A carburetor with a mechanically controlled accelerating pump and power jet will not put out a power mixture unless the accelerator pedal is nearly fully depressed. A carburetor with a vacuum operated power jet will provide a power mixture whenever the vacuum drops to a predetermined point, say, 8 inches. On a grade, the mechanically operated jet will remain closed longer, resulting in overheating and knocking, but with a saving in fuel. In the case of a vacuum controlled power jet, as soon as the load becomes appreciable the jet automatically opens by vacuum, resulting in a knockless pull with a sacrifice in economy.

Figure 4, a carburetor flow chart, shows the amount of gasoline flow through the jets for a known air flow through the venturi. Dotted lines indicate the flow characteristic with older model cars. The lower dotted line indicates the rate of gasoline flow through the main jet only, while the upper dotted line indicates the total flow through the main and power jets. The vertical distance between the dotted lines indicates the contribution of the power jet whenever maximum power is demanded.

The solid lines indicate today's carburetor settings. Leaner main jets are furnished, resulting in better fuel mileage, but richer power jets are used to insure maximum power at full throttle.



Also, the main jet operates alone up to very high speeds before the power jet opens. Under these conditions, cars are operated at high speed with exceedingly lean mixtures, resulting in severe detonation at the higher speeds with many non-premium gasolines.

Ferrini Wildcat Keen Disappointment

Keen disappointment was felt when Fred Cole's Ferrini No. 1 entered the Franciscan basement without encountering productive zones. Located in sec. 15, 10-35, near the town of Guadalupe, the well was considered to have an excellent chance of finding Monterey production similar to that in the Santa Maria Valley field. Pending a decision of its final disposition, the project is standing idle at 4700 ft.

LAUGH THIS OFF

Away back in the good old days **Mart Bowser**, then a drilling foreman, ordered a newly employed truck driver to "Go to the warehouse and pick up a 1000-pound gauge." Some time later Mart spotted the truck driver sulking around and he promptly barked, "Say, haven't you gone for that gauge yet?" "No, sir," was the indignant reply, "I ain't lifting no 1000-lb. gauge without a helper."

And speaking of an old buddy, the rousty says, "Know him! Sure I know him. Why he was my running mate in the war."

Since then the only military personages with whom we have associated have been Major Operation, General Expense, Corporal Punishment, and Private Keep-out.

Which prompts **Harry Hensell** to again remind us that war usually starts out as a battle to determine which side is right, and ends up as a battle to determine which side is left.

Now comes a weird story from **Andy Hazard** about an out-of-work oil man who went to a vaudeville booking agent and begged for a job. "What can you do?" asked the agent. "Well," he says, "I have an unusual act. I dive off a 142-ft. derrick into a barrel of sawdust." "That sounds interesting," ventured the theatrical mogul, "Let's have a demonstration." And without parley the oil man spotted the barrel in the proper location, climbed up, and dived neatly head-first into the sawdust. "Say, that's really spectacular," the agent admitted. "You can consider yourself booked at $50 a week." "Oh no," says the stunt man, "It's gonna cost you $100 a week." "Why the hold out?" was the next question, and the oil man explained, "Well, that's the first time I ever tried the crazy thing, and it's given me a beast of a headache."

"Your story has a hollow ring," **Wynn Lynch** remarked somewhat skeptically to the applicant, and the latter replied, "Yeah, I know, I'm speaking on an empty stomach."

After all, if you want to make a living, you simply must work for it, and if you want to get rich, you've gotta do it some other way.

And **Johnny Quayle**, the Arcadia farmer, has found that if you don't want grass to grow under your feet, the thing to do is keep walking around on the front lawn.

According to a government expert, there are 3,000 known varieties of fish in the United States, and **Earl Carnahan** suggests that the government might add substantially to the species by taking a trip out to Hollywood Park next Saturday.

In this connection, **Harry Lee** has a system for beating the game that is the best yet. To double your money, go to the races, fold your bills over once, and put them back in your pocket.

And did you know that the best way to keep a horse from slobbering is to teach him to spit?

This ad, according to **Johnny Kline**, appeared in an oil field newspaper recently, "For sale—Chevrolet, by owner. Recently overhauled."

We have since been wondering if he was overhauled by a motor cop.

Then there was the Richfield rousty who came out of the plant just in time to see some thieves making off with his car, so he took the license number.

Wherewith we retire, giving our readers a well earned rest, and as we turn down the sheets, **Scotty Connelly** arrives to report the case of the Caledonian artist who uses burnt toast to make charcoal sketches.

And it's a remarkable fact that many people think oil workers are peculiar to California, while others think they are just peculiar.

HERE'S WHAT I CAN DO FOR YOU
Use me to—BRING IN WELLS EASILY—GET GOOD CEMENT JOB — SET LARGER CASING OR LINER — STRAIGHTEN CROOKED HOLE—GET BOTTOM WATER SHUT-OFF—ENLARGE HOLE FOR GRAVEL PACKING—DETAILS ARE IN THE BAKER SECTION OF YOUR COMPOSITE CATALOG.
BAKER ROTARY WALL SCRAPER

ALISO CANYON OIL FIELD

Northerly Extension failures for Union, Standard

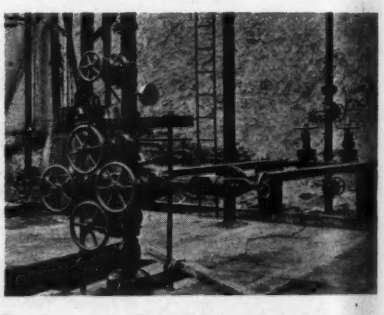
Looking down on Tide Water Associated's Porter No. 11, the company's third well in the field, the observer marvels at the fine road which Tide Water, Standard and Union have carved on the canyon slopes.

With two large producers flowing and a southerly test down 2000 ft., Tide Water Associated, discoverer of the Aliso Canyon oil field, enjoys bright prospects of realizing handsomely on a heavy investment in this rugged country.

Tide Water built the original 5½ mile road from level ground to the elevated discovery well drilling site. Later, Standard Oil Co. of California and Union Oil Co. joined with Tide Water in constructing the present splendid road.

Oil from Tide Water's Porter Nos. 1 and 2 is transported by gravity pipeline to terminus. As water is not available near the drilling operations, there is a welded water line paralleling the oil line. Property owners required the fencing of the area.

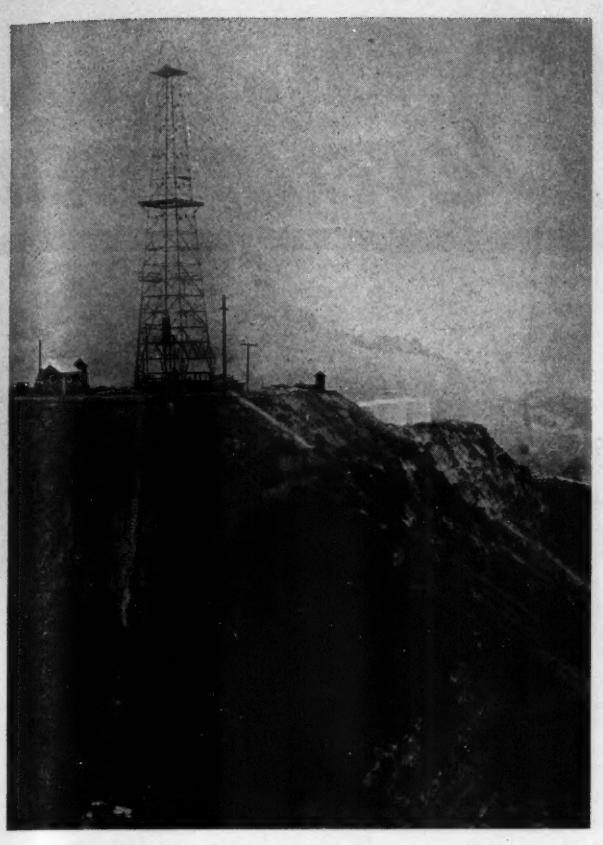
To minimize fire hazard, smoking is prohibited within the extensive enclosure. No boilers are used in the field, all power being supplied by direct butane engine hookup or butane engine driven electric equipment.



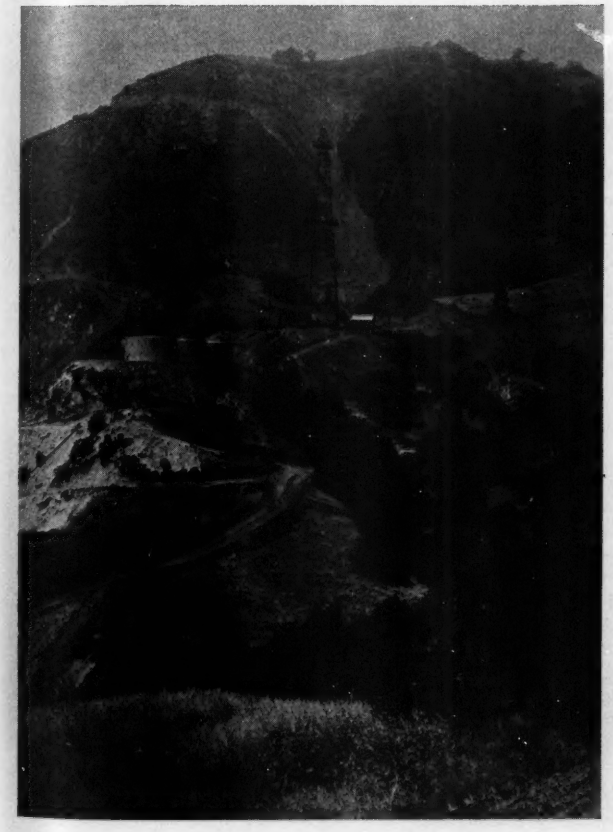
To date only Tide Water Associated has had use for a christmas tree in Aliso Canyon. This is Porter No. 2, beaned down to 250 bbls. daily from a potential exceeding 1000 bbls. daily.

Farthest left is Porter No. 11, grinding slowly and noisily through extremely hard formations. Still a good 100 feet from the 2000-ft. level, the well has been drilling several weeks. Next to the right is Porter No. 1, the discovery well. Next is Standard's abandoned H. R. Ward No. 1, and Union's discouraging S. S. Orcutt No. 1.

At the terminus of the 5½-mile pipeline tank trucks pick up the crude oil, some 500 bbls. a day.



The discovery well is on a man-made plateau.



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Field Development

San Joaquin Valley

Four Strings Running At Cole's Levee Field

Ohio Oil Co., operator of two producing wells and discoverer of the areas' production, is drilling KCL No. F-3 as an offset to Union Oil Co.'s Kernco No. 1-11, recent completion. Located in sec.11,31-25, the well is standing cemented with 11¾" casing on bottom at 1406 ft.

One location north of 1-11 the Union Oil Co. is rigging up Kernco No. 2-11 in sec.11,31-25. Nearing the possible pay zone, Richfield Oil Corp. is drilling below 8400 ft. in hard shale. Located north of the producing wells on sec.3, 31-25, and known as Western 2nd.-B-14-3, the well correlates 50 ft. higher than Ohio's discovery well No. F-1.

One mile west of production, the Standard Oil Co.'s KCL No. 20-1, located on sec.9, originally bottomed at 9215 ft., is now drilling below 8500 ft. after sidetracking a fish from 8474 ft.

Most southerly of the tries is Tide Water Associated Oil Co.'s KCL No. 61. Located near the north line of sec. 14, the well cored the top of the oil sand at 9932 and stopped at 10,010 ft. to set casing. The top of the sand was found 290 ft. lower on the structure than Union's Kernco No. 1-11, the nearest production.

Arvin Area Rapidly Becoming Field

With recent completions bringing total number of producers to four, and a formation test indicating success for a fifth, and with five other projects in various stages of progress the Arvin Area is a busy spot.

Latest completions were by The Texas Co. and Universal Consolidated Oil Co. The Texas Co.'s Jewett No. 1 in sec. 16,31-29 initialed 1632 bbls. of 29 gravity oil cutting 25% through a 48/64 in. bean accompanied by 750,000 cubic feet of

SAN JOAQUIN VALLEY WILDCATS

Fresno County

Area	Well	No.	Section	Depth	Status
Cantua Creek	Shell Oil Co., Port Costa	48-30	30, 17-16	9110	Drilling
	The Texas Co., Loeschner	1	12, 17-16	3893	Drilling
Coalinga	Amerada Pet. Corp., SPL	26-17	17, 19-16	6013	Drilling
	Bandini Pet. Co.	48-18	18, 19-16	5302	Drilling
	Parkford, E. A.	1	24, 20-15		Location
	Roco Oil Co., Lindblom	1	3, 20-14	1910	Abandoned
	Rylatt, Harry E., Kipling	3	26, 20-14	1775	Drilling
	Stuart Oil Co.	1	12, 21-14	1410	Testing
	Superior Oil Co., P.V.	1	22, 20-15	7390	Drilling
	Union Oil Co., Cook	86-18	18, 19-16		Location
Fresno Area	Seth Turner	1	4, 14-19		Rig
Gatos Creek	Gatos Creek Oil Co.	1	19, 19-13		Rig

Kern County

Buena Vista	Gen. Pet. Corp., B.V.A.	1	1, 32-24	4354	Redrilling @3863
	Western Gulf Oil Co., K.C.L., Panhandle	1	3, 32-26	7580	Drilling
Buttonwillow	Calif. Explor. Co., Salisbury	1	7, 29-24	12989	Testing
Canal	Shell Oil Co., KCL	B-87	4, 30-25	13957	Suspended
Devil's Den	Luxton, W. L.	1	27, 25-18	710	Idle
Edison	Harris, S. F., Zenith	1	27, 30-30	405	Idle
	Renner & R.H.L. Oil Co.	1	27, 30-30	2600	Idle
Elk Hills	Richfield Oil Corp.	A-12-33	33, 30-25	7040	Drilling
	Standard Oil Co.	KCL 21-1	19, 30-25	9098	Drilling
Grapevine	Richfield Oil Corp.	KCL 1	28, 11-20	11004	Testing
	The Petrol Corp., Reserve-Petrol	33-5	33, 11-19	8946	Redrilling @7007
Lost Hills	Auman, Allen Lincoln-Theta	1	12, 26-20	1570	Idle
	California Lands, Occidental	2	24, 26-20	5623	Idle
Mt. Poso	Crestmont Oil Co.	1	20, 26-28	1547	Pumping
	Wright & Eyer	1	28, 26-28	1512	Bailing
Poso Creek	Little & Gilstrap, Keating	2	20, 27-27	2458	Abandoned
Richgrove	Crusaders Pet. Corp., Quinn	1	9, 25-27	40	Rigging rotary
	Dilamar Oil Corp., Quinn	3	15, 25-27	2929	Idle
San Emigdio	Bannow, Louis E., Irvin	1	15, 10-23	866	Drilling
	Continental Oil Co.	KCL F-1	5, 10-21	3640	Drilling
	Shell Oil Co.	Union 76-31	31, 11-22	4314	Abandoned
Strand	Continental Oil Co.	KCL D-2	14, 30-36	8454	Drilling
	Tide Water Assoc.	KCL-E-35-7	7, 30-26	8364	Testing
Trico	Standard Oil Co., T. G. & T.	2	2, 25-33	2430	Shut in
	Standard Oil Co., Tulare Farms	2-1	35, 24-23	2010	Drilling
Wasco	Getty, George F., Janssen	1	7, 27-24	1700	Drilling
	Union Kernco	1-36	36, 27-24	12985	Testing

Kings County

Strattford	P. W. Burnham & Assoc., Bartells	1	23, 20-20		Rig

Tulare County

Ducor	Amal. Oil & Gas Co., Konda	6	23, 24-27	2072	Abandoned

gas. Last curtailed production was 261 bbls. daily of 29.8 gravity oil cutting less than 1% through a small bean. The Texas Co. is grading for Jewett No. 2 in the same section.

Universal Consolidated Oil Co.'s Universal-Derby No. 1, located in the adjacent sec.15, came in at a 3800 bbl. rate and was last reported making 300 bbls. of 29 gravity oil through a 8/64 in. bean under curtailment. The company's No. 2 is drilling one location to the north on the same lease.

Standard Oil Co., who brought in the discovery well, is preparing to complete No. 2, and has built rig for No. 3, all in discovery section. On a 30-minute formation test of No. 2 from the interval 6047-82 recovery was 3400 ft. of clean 27.6 gravity oil.

Standard Oil Co. is building rig for a well south of the present activity in sec.22,31-29 to be known as Tupman No. 1.

First activity north of the present play was started with the location of No. 1 on the 160-acre Mott lease by Richfield Oil Corp. The well will be an offset to the recently completed Texas Co.'s Jewett No. 1.

Strand Test Makes Good Flow From Stevens

A final production test of Tide Water Associated Oil Co.'s Strand area discovery well, Cont.-KCL No. E-35-7, on June 2, 1939, resulted in a strong flow of 27 gravity oil cutting 42 percent.

At the last report the well was flowing through the tester making 877 bbls. gross daily, 509 bbls. net, cutting 35 percent mud and 7 percent water. 930,000 cu. ft. of gas accompanied the flow.

Located a mile northeast of the Canal Field, in sec.14,30-26, the well cored oil sand classified as Stevens from 8310 ft. to 8355 ft., below which was 9 ft. of gray sand to bottom at 8364 ft.

An encouraging formation test was made prior to setting casing at 8300 ft. when clean oil reached the surface in 10 minutes and flowed at an unestimated rate for an additional 10 minutes before being shut off. The first cement job on the casing tested wet, and the hole was recemented for the test resulting in the present production.

Pleasant Valley Farm Lands Test Progresses

Superior Oil Co.'s test of the pleasant Valley Farm lands in sec.22,20-15, is drilling below 7300 ft. in sand and shale. Known as P. V. No. 1, the well is drilling to establish productive connection between the Coalinga Eocene Pool and the main body of the old Coalinga field.

Superior Oil Co. has poured foundation for another wildcat attempt at establishing additional Fresno County oil production. The proposed try is to be known as S.P.L. No. 1 and is located six miles northeast of the Amerada area in sec.15,18-16.

Nagayama & Haranaga Obtain Coalinga Out-Post

Taking over the Leo F. Jarvis well No. 2 in sec.14,20-14, Nagayama & Haranaga have renamed the well No. 1 and run 4¼" casing to 782 ft. With bottom at the 805 ft. mark in the Domengine Reef Beds, the well was last reported as standing cemented.

The finish of another westerly outpost was written when Roco Oil Co. announced the abandonment of Lindblom No. 1. Located in sec.3,20-14, the hole was bottomed at 1910 ft. with 8⅝" casing set at 500 ft.

Another try at the westerly limits of the Coalinga field is drilling below 1700 ft. Known as the Harry E. Rylatt Kipling No. 3, the project is located north of the center of sec.26,20-14. The well encountered streaks of oil sand at the 1200 ft. mark and is now bottomed in gray sand at 1770 ft.

Stuart Oil Co.'s Stuart No. 1 located south of the field in sec.12,21-14, is

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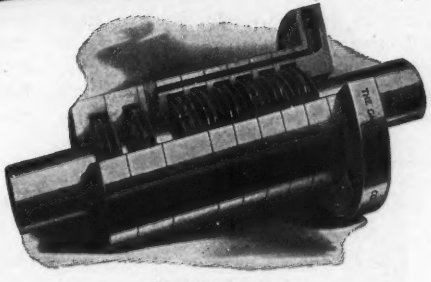

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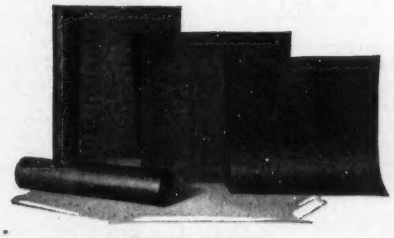

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standing recemented for the second time. With oil sand reported from 1383 ft. to bottom at 1410 ft., the operators have had difficulty shutting off the water with the 6⅝" string cemented at 1385 ft.

Gatos Creek Test Rigging Up

Fourteen miles west of the North Coalinga extension, in an undrilled area, the Gatos Creek Oil Co. is rigging up well No. 1 on sec.19,19-13.

Getty Spuds Wasco Test

Half a mile northwest of production, in sec.7,27-24, George F. Getty has spudded Janssen No. 1. With 16 in. pipe set at 994 ft., the hole was last reported as drilling in shale below 2200 ft.

Standard Oil Co. extended the field to the south with the completion of KCL No. 8B-2. Located near the north line of sec.17,27-24, the well flowed a 6110 bbl. rate of 37.5 gravity clean oil through a 37/64 in. bean on production test. Last production was given as 1598 bbls. in 16 hours accompanied by 830,000 cubic feet of gas. The well is shut in having produced its allowable in a few hours.

Shell Finds Barren Eocene at Cantua Creek

Last reported as just below 9000 ft., Shell Oil Co.'s Port-Costa No. 48-30 in sec.30,17-16, 10 miles north of the new East Coalinga production, is drilling ahead in gray sand. The formation, classified as Eocene, was topped at 8900 ft.

Five miles northeast of the try, The Texas Co.'s Loescher No. 1 is drilling in sand and shale below 3500 ft. Texaco has shown considerable faith in the ultimate discovery of oil in this district by leasing large blocks of land.

Second Well Drills In Discovery Section

One location northeast of its discovery well, Amerada Petroleum Corp. is below 6000 ft. in S.P.L. No. 26-17. If the formations correlate with No. 7-17, the drill must penetrate another 2000 ft. before picking up the Eocene sand from which production is obtained.

One half mile west, Bandini Petroleum Co.'s well No. 48-18, located near the south quarter corner of sec.18,19-16, is drilling in shale and sand below 5300 ft. This is the first test hole to be drilled between the Amerada production and the easterly limits of the old Coalinga East Side field. The Bandini hole will have great significance in correlating the relationship of the two structures and is eagerly watched by leaseholders surrounding the play.

Union Stakes Location For Extension Try

Union Oil Co. has staked location for Cook No. 86-18 near the east quarter corner of sec.18,19-16. Located near the east line of Union's 160-acre lease offsetting the Amerada discovery, the well will be the second extension attempt in the new area.

Standard Drills Trico Outpost

The Standard Oil Co.'s outpost gas try in sec.35,24-23 is the sole driller in the Trico Area. Located a mile north of south end field production, the well known as Tulare Farms No. 1, is below 1931 ft. in sandy shale.

Shell Abandons San Emigdio Try

Adding another failure to the cluster of abandonments north of the Rancho San Emigdio, Shell Oil Co. has abandon-

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ed Union No. 76-31 with bottom at 4314 ft. A formation test of the interval 3765-3816 ft. yielded salt water with a trace of gas. The drill showed nothing of interest below the test and the well was terminated June 1st.

A mile west of the Rancho, Louis E. Banow's Irwin No. 1 is drilling below 1150 ft. Last reports from the well, which is being drilled with light portable equipment on sec.15,10-23, place the formations as brown sandy shale showing traces of tar.

East of the Rancho San Emigdio in sec.5,10-21, Continental Oil Co.'s KCL No. F-1 is coring ahead in hard brown Miocene shale below 3542 ft. This test is near the two holes drilled by the Union Oil Co. in the section and which were carried to 3900 ft. without encouragement. Belief is strong however that oil production will be obtained somewhere on the structure lying north of the Rancho limits.

Richgrove Try Drills Ahead

After making a technical spud with cable tools, Crusaders Petroleum Corp. has rigged rotary equipment to resume drilling on Quinn No. 1. Located on sec.9,25-27, the wildcat is in an area sometimes referred to as the Jasmine district, due to the fact that the test lies equadistant from each town.

Wheeler Ridge Test Ready to Set Casing

After a careful hole conditioning job the Richfield Oil Corp. is preparing to set 6⅝" casing at 10,815 ft. in KCL No. 1, Wheeler Ridge deep test. A production test of the formations open is expected to produce oil from a zone heretofore nonproductive in the south end of the valley. The oil sands in which the test is bottomed are classified as the San Emigdio sandstones of the Oligocene epoch.

Present bottom of 11,004 ft. is the result of deepening operations carried from the Middle Miocene formations from which the well produced early in the year. Gas lift failed and water encroached so rapidly that the company instituted the deep test to prove or disprove the feeling that deeper and better production under-laid the lease.

Results of the production test will be carefully watched since commercial production from this zone will open new vistas of south valley drilling.

Petrol Corp. Resumes Test at Grapevine

The Petrol Corp. has resumed drilling in Reserve-Petrol No. 33-5 in the Grapevine Area located near the foot of the Ridge Route. Located on sec.33, 11-19, the well was suspended April 1st with a fish in the hole. Interest in the Richfield project plus the ever current belief in oil near the site has led to the resumption of operations.

With the top of the drill pipe fish at 6886 ft. safely sidetracked, the hole is now drilling at 6940 ft. toward the original bottom of 8946 ft. Drilling history of the original hole shows that heavy going is ahead since most of the 2000 ft. to be made up is composed of Basalt, hard shale and sandstone.

Cont. Oil Co. Finds Stevens Zone Barren

Drilling in the little prospected area northeast of the Ten Section field, Continental Oil Co.'s KCL No. D-2, in sec. 14,30-26, has reported the Stevens zone barren at this point. Bottom is now reported as below 8400 ft. in hard shale with streaks of hard sand.

New explosion-proof lighting fixture suitable for side-wall mounting can be used in atmospheres containing solvents and petroleum products.

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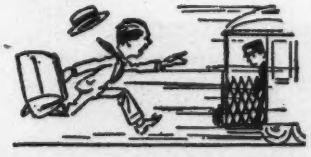

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Within a few hours of the capping of V-8 Oil Co.'s wild well in West Montebello field, June 2, another well, Pongratz, blew out a short distance to the west. Pressures encountered exceed 2000 pounds. Initial output is estimated at 1000 bbls.

Los Angeles Basin

Blowouts Feature West Montebello News

Demonstrating that the lower Seventh zone has the highest pressures yet encountered in the West Montebello field, two wells recently blew out of control at the estimated rate of 800 to 1000 bbls. of 50 gravity oil and 8,000,000 to 10,000,000 cu. ft. of gas. The first accident occurred while attempting to lower tubing under a reported pressure of 2000 lbs.; the second happened while pulling a formation tester.

With the hole bottomed at 7633 ft., and with the liner perforated from 7250 to 7350 ft. and 7520 to 7633 ft., V-8 Oil Co. set a production packer between the perforated intervals and completed the well flowing an estimated 500 bbls. a day from the upper horizon through the casing. Despite a flow pressure reported as close to 2000 lbs., an attempt was made to lower the tubing through a valve in the production packer in order to bring in the lower zone through the tubing. Mechanical difficulty encountered in getting the tubing through the production packer necessitated withdrawal, during which a tubing collar ripped out the packing of the surface blow-out preventer allowing both zones to blow to the air uncontrolled.

After a 30-hour battle, a new blow-out preventer was installed and the well returned to controlled production. The tremendous quantity of gas, together with the extremely volatile high-gravity oil, constituted a fire hazard which forced all adjoining operators into idleness. A fire hose was played on the derrick at all times and giant wind machines were used to blow the oil spray to the north where it would do the least damage.

Twenty-four hours after the V-8 well was controlled Pongratz Petroleum Co.'s Newmark No. 1 blew in while pulling a testing tool after testing the splice between liner and casing. Deepened from the fourth finger of the Sixth zone, the well had 7 in. casing cemented at 6650 ft. and 1040 ft. of 5 in. liner including 100 ft. of perforated had been landed on bottom and cemented at 7540 ft. During the test, a very strong gas blow was noted indicating that the high pressure Seventh zone gas sands had not been fully cemented off. No perforations were open, the cement not having been drilled out at the "c.p." point. While pulling the tester, the mud was blown from the hole with 28 stands of drill pipe yet in the hole.

An attempt was made to reseat the formation tester, but apparently the gas had cut out the packing and as the valve could not be opened unless the packer seated, the well continued to blow through the casing and around the drill pipe. An improvised christmas tree was then made up in the derrick on one joint of drill pipe below which was a packer and a perforated section. This assembly was screwed into the drill pipe and the whole lowered until the christmas tree was approximately eight feet from the derrick floor. At the moment the packer was set, however, the top fitting which was holding the entire weight of the drill pipe and tree, gave way dropping the string to the bottom of the hole. The tree was left on the rotary table. The terrific rush of gas was stilled during the time required for the pipe to go down the hole but resumed within a minute or two with more of an inclination to head. Some observers believed more oil was in evidence.

Many thousands of barrels of high gravity oil and many millions of cubic feet of gas blew to the air from 6:30 p.m. June 3rd to early June 6th when the well was finally brought under control.

Shortly before activity was suspended

LOS ANGELES BASIN WILDCATS

Area	Well	No.	Section	Depth	Status
Castaic	Lang, Ed. W., Rupy	1	7, 5-16		Rigging up
Inglewood	Vanguard Oil Co., L.A.I.	1	29, 2-14		Rig
Montebello, West	Ridge Oil Co., Sea Cliff	1	3, 2-12	6900	Drilling
Newhall	Mangrum and Page, Lintz	1	4, 3-15	352	Idle
	Palmluck Oil Co.	1	23, 3-16		Rig
Palmdale	New-Cal	1	17, 6-12	1250	Idle
Palos Verdes	Rolling Hills Pet.	1	27, 4-14	5385	Idle
Playa del Rey	Empire Oil Co., Samarkand	1	34, 2-15	6413	Drilling
Puente	Stabeck & Assoc.	1	14, 2-10		Rig
San Pedro	Grady, R. T.	1	23, 5-14	650	Idle
Sunland	South Alta Oil Co.	1	1, 2-15		Rig
Towsley Canyon	J. E. O'Donnell	1	8, 3-16	4900	Drilling
Whittier	Langstaff, Geo. W., Iliff	1	8, 2-11	2250	Idle
	H. C. Oil Co., Joyce	1	22, 2-11	3600	Idle
	C. W. Partridge, Hillside	1	22, 2-11	1780	Cleaning out
	Taylor Drlg. & Prod. Co., Gregg	1	17, 2-11	4565	Drilling
	Vulcan Oil Co., Drake	1	17, 2-11		Location
	Orange County				
Costa Mesa	A. V. Oil & Gas Co.	1	16, 6-10	4751	Idle
Dana Pt.	Dana Point Oil Assoc.	1	15, 3-8		Cellar
Kraemer	Congress Oil Co.	2	36, 3-9		Foundation
	San Bernardino				
Carbon Canyon	Carbon Canyon Oil Co.	1	30, 2-8		Rig

WHEN COMPENSATION COSTS GO UP...

● WHEN your Workmen's Compensation Insurance costs go up ... or remain the same... it is often a sign you are not getting all the services you are paying your insurance company to perform ... for many oil companies are constantly reducing their compensation costs.

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To make it easy for you to determine whether or not you are getting complete service, we have prepared an interesting chart which lists the services to which you are entitled. Write today for your Free Copy. Ask for Data Sheet D-5.

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in the Maple Ave. area due to the blowouts, Montebello Wesco, Inc. completed Montebello No. 1 with 350 ft. of the Seventh zone open to bottom at 7618 ft. Both lower fingers of the Seventh zone were produced together at the initial rate of 750 bbls. a day; the gravity testing 52 dgr. API, because of gasoline condensation from the nearly 10,000,000 cu. ft. of gas. No water appears in the flow of either this well or the V-8, the only wells on settled production from the bottom fingers of the Seventh zone in the Maple Ave. district.

In the same section of the field, the Brookline well is being re-completed in the deep zones by La Merced Drilling Co. The well formerly produced from the Sixth zone. Montebello Reservoir Oil Co. is completing its No. 2, also in the Seventh. Both projects are bottomed slightly below 7600 ft., the former having 150 ft. open and the latter 350 ft. The 7300 ft. finger may be gun perforated in the La Merced Drilling well.

At the extreme westerly end of the field, R. R. Bush Oil Co. is drilling Alauzet No. 1 below 3500 ft. The well is an offset to Olds No. 1 which the company recently completed flowing 700 bbls. a day from the upper Seventh zone. Production was clean, indicating that field limits have not yet been reached in this direction.

South of Beverly Blvd. and west of Maple Ave., Hathaway Oil Co. deepened its Seventh zone discovery well, Dore No. 1, to 7500 ft. where a formation test indicated good production could be obtained. The well probably will be deepened another 150 ft. before completion.

Stanley Oil Co., whose first Montebello try earned the reputation of being the field's Jonah, will soon be the owner of a producer. Montebello No. 1 is coring oil sand below 7200 ft. after cementing 7 in. casing at 7013 ft.

Greatest activity is now concentrated in the easterly section of the field which was opened up with the completion of Union Oil Co.'s Calkins and La Merced wells. First of the independents to obtain production were Graham & Loftus and Wood-Callahan, both near the intersection of Sixth St. and Lincoln Ave. None of the latest crop of entrants are yet deep enough to be interesting. Vulcan Oil Co. is deepening Nash No. 1, originally completed in the Sixth zone.

With the St. Helens first deep zone discovery more than a year in the past, the Montebello west end field is now just coming into its own. Not a single dry hole has yet been drilled and there seems to be little likelihood of there being any for some time in the future. Edge conditions have not been found in any Seventh zone well to date with the exception of Union's La Merced No. 30, which passed through a fault, and with reasonable common sense, this record should be maintained for some time. Each new deeper zone has been greater in area than its predecessors, and usually, more productive; the lower Seventh having the highest pressures of them all, so far. Engineers and geologists who have been closely associated with the development of the field believe that and eighth and possibly a ninth zone underlie present productive horizons, a belief that is well substantiated by logs of deep tests east of the control fault where all of the present zones were found barren. Only fly in the West Montebello ointment is the indisputable fact that all zones are relatively thin and cannot support over-drilling.

Texas Finishes Torrance Well

The Texas Co. is finishing its sixth well on the Oakley lease in the Torrance Extension area. Bottomed at 5240 ft. in oil sand, the project has a 7 in. wa-

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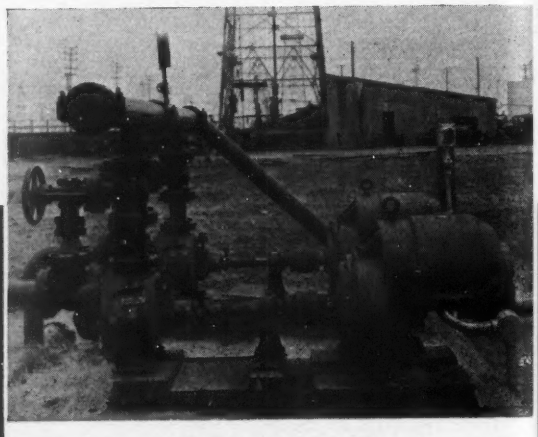

FROM THE WORD "GO"

The minute the well "comes in", Viking is on the job. From there through every stage of the petroleum process, Viking lends a hand. Specifically built for the task of handling all types of Petroleum products, Viking Rotary Pumps are willing workers . . . efficient, dependable, sturdy. Bulletin 404-35 will prove interesting . . . write for a copy today.

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ter string cemented at 5081 ft. and a perforated liner landed in the open hole.

Preparing to drill No. 5 is D & B Oil Co., discoverer of the Extension. The new well is to be at the intersection of 253rd and Dodge Sts.

Veteran California operator Jim O'Donnell is drilling his well No. 72 on Oakley property.

Nothing has occurred to re-enlist interest in the late hot spot. F. S. D. Oil Co. which hoped to make a well in the shallow zone after finding the Del Amo barren, has, so far, recovered a quantity of water with a little oil. The well is located on 240th St. between Narbonne and Eshelman.

South of the intersection of Hawthorne and Sepulveda Blvds., World Petroleum Corp. penetrated the schist to 4873 ft. and is attempting to complete after perforating 4¾" casing cemented at 4610 ft.

Wilmington Field Is State's Most Active

The distinction of being the State's most active field must yet remain with Wilmington where approximately 25 strings of tools are now working on routine jobs. Within a few days, however, the number is due for a sharp increase, as Long Beach Oil Development Co. has just completed half a dozen wells, the equipment from which probably will be moved to the many new locations already staked out.

Although topping the list in activity, there is, at the present time, no tendency to extend present field limits, the new drilling being confined to companies holding properties within the large area known to be productive.

In the Wilmington townsite area, are several redrilling jobs occasioned by liner failure, the abrasive sand action being especially bad in the Ranger zone.

Transwestern Tests Potrero Cemetery Area

Following the success of Basin Oil Co. in developing good production in the Potrero field, Transwestern Oil Co. is preparing to plug back and redrill Turner No. 4 at the corner of Queen and Prairie Sts. west of the cemetery. Depth of the hole is approximately 6250 ft., but it is planned to plug to 1300 ft. and whipstock to the east, according to reports.

Basin Oil Co., which now has four good high gravity producers on the golf course, is the only company to be consistently successful in the field, a fact which is attributed to their thorough laboratory analysis of each core during the drilling of each well.

Monarch Abandons Topanga Well

Sylvia Park No. 1, intermittently worked Topango Canyon wildcat, was recently abandoned by Monarch Petroleum Co. Drilled to a depth of 1823 ft. over a period of four years, the well encountered no worthwhile oil showings. Location of the test was in sec. 5,1s-16w.

Rosecrans Outpost Wet on First Test

Much disappointment was felt at the result of the production test of Howard Oil Associates southerly extension well at Rosecrans when the output was 90% water testing 800 grains per gallon. Forty feet of oil sand was cored to bottom at 7644 ft. Probable source of water is the casing shoe on which only a deferred decision was allowed by the State Division of Oil & Gas. Inadvertently, casing was cemented at 7552 ft., 30 ft. higher than had been intended.

Test Wells Scheduled For San Fernando Area

With the way cleared by the Los Angeles City Planning Commission, work is expected to start soon on two wells near the west end of the San Fernando Valley. Fernando Oils, Ltd. has announced plans for drilling the townsite of Chatsworth, while, more recently, Continental Oil Co. received an "OK" to prospect the Howell property approximately one mile south of Tide Water Associated's Aliso Canyon field. Leasing has been active throughout the westerly section of the valley and it is probable that other tests will be started before too long.

East Coyote Outpost Pumping 215 Bbls. a Day

Adding another good well to its long list of successful West Coyote extension wells, Bartholomae Oil Corp. completed Stern No. 8 pumping 215 bbls. a day from a 40 ft. perforated interval below 4300 ft. Casing was cemented on bottom at 4788 ft. and gun perforated at this point to test a sand which looked doubtful on the log. It is planned to perforate in the more prolific lower horizons now that the top zone is proved to be clean.

Union Oil Co.'s Hole No. 21 is standing idle after cementing surface casing at 570 ft. and Tide Water Associated Oil Co. is redrilling Anaheim No. 54 at about 2500 ft.

You are reading the Pacific Coast oil men's home paper.

Standard Abandons Aliso Canyon Well

Finding the limits of production much smaller than originally supposed, Standard Oil Co. has abandoned H. R. Ward No. 1 in the new Aliso Canyon field. Located as a northerly offset to Tide Water Associated's discovery well, Porter No. 1, the Standard project intersected the fault nearly 3000 ft. lower than its neighbor. Nothing was found in the Pliocene, productive on the Porter lease, nor in the Miocene above and below. The hole was carried to 6909 ft.

Union Oil Co.'s S. S. Orcutt No. 1, located east of the Standard well and northeast of Porter No. 1, attempted to produce intervals from 5530 to bottom at 5980 ft. but obtained a fluid entry of only a little water with a trace of oil.

Very slow progress is being made by Tide Water Associated Oil Co. on Porter No. 11, the company's third well. After several weeks, the drill has attained a depth of only 1889 ft.

Tide Water Associated's first two wells, Porter Nos. 1 and 2, are averaging 250 bbls. daily each under curtailed flow, their capacities being about 1000 bbls.

Ditch Shows Seen at Ridge Wildcat

Although nothing in the way of commercial oil sands has been found, Ridge Oil Co.'s wildcat, Seacliff No. 1, has encountered some interesting ditch showings. With 6900 ft. as the last reported bottom, the well has cored a few intervals where sands gave fair cuts, the operators claiming the showings to be increasing in frequency with depth.

del Rey Outpost Ready for Test

Empire Oil Co., a de Bretteville company, is preparing to test for production after cementing 7 in. casing at 6215 ft. and bottoming at 6413 ft. The top of the schist is said to be 6270 ft. The well, which is called Samarkand No. 1, is located at the southwesterly edge of the old field.

Castaic Well Started By Los Angeles Man

In sec. 7,5n-16w, near Castaic, Edward M. Lang is spudding in a well using light, portable cable tools. Said to be backing the project is H. P. Oats of Los Angeles.

After several months of service, the helium in a dirigible's gas bag can be "cleaned" and used over again.

Coastal District

Lloyd 2 Blows In at Ventura Avenue

Most sensational event in recent Ventura Avenue history occurred June second when Lloyd Corp.'s well No. 2 started to flow while circulating oil to loosen stuck drill pipe. On first 24 hour gauge, production was 2257 bbls. cutting 4.0% flowing through a 32/64 in. bean, the rate later dropping to 1720 bbls. with the bean reduced to 24/64 in. Water content rapidly diminished to less than 1.0%. The flow is from the interval between the shoe of the 7 in. casing at 7497 ft. and bottom at 9976 ft. and is coming around the drill pipe which stuck on bottom while drilling. Lloyd Corp. No. 2 is located in the easterly section of the field as an offset to the McGonigle and Ventura Land & Water Co. leases of Tide Water Associated Oil Co. and extends deep production a little to the north.

Hartman No. 7, British American Oil Producing Co.'s hoo-dooed Ventura Avenue well, was recently completed as a very fine producer. Bottomed at 8400 ft., and with 8⅝ in. casing cemented at 7870 ft., a perforated liner was run and the well swabbed in at the rate of 1225 bbls. of clean 31 gravity oil per day. Accompanying the oil is 1,600,000 cu. ft. of gas. With a one inch bean, flow pressure is 200 lbs. and casing pressure 700 lbs.

California Alliance Oil Co., headed by Lyman C. Hisey, has started preliminary grading operations for a new well on Hartman property on the north side of the field.

Shortly after recovering from one sidetracking job, Lloyd Corp.'s No. 2 stuck drill pipe on bottom at 9976 ft. and is circulating oil in an attempt to loosen. The well is located at the easterly extremity of the field.

Hogan Deepens Zabala Core Hole

Hogan Petroleum Co. has built a big rig over the abandoned Zabala Core Hole No. 1 and is preparing to deepen below present bottom of 1200 ft. It is planned to carry the well down as a deep test of Miocene formations. Location of Zabala No. 1, which was the first of three prospect wells, is in sec. 33, 9-34, near Orcutt in Santa Barbara county.

Three Wells Drill In Shiells Canyon Area

In the vicinity of Shiells Canyon are three active projects.

El Rancho Oil Co.'s Elkins No. 3, sec. 9, 3-19, is coring shale streaked with oil sand below 3360 ft., while The Texas Co.'s Shiells No. 137 failed to encounter productive sands to 3223 ft., plugged to 2000 ft. and is redrilling below 2700 ft. Galveston Oil Co. ran an electric log to bottom at 3140 ft. in Basola No. 1, sec. 5, 3-19, and is reported as temporarily idle.

English Drills In Hopper Canyon

With the hole last reported below 2200 ft. in depth, J. A. English's Lankershim No. 2 is now the most interesting well in Hopper Canyon. Formations to date have consisted mostly of shales, but several good oil showings have been noted. Leasing has been active in this section of Ventura county and it is to be expected that some new work will be launched early in the summer.

In the Sespe area, Merchants Petroleum Co. reports a daily yield of 40 bbls. from Cochrane No. 8 which was recently completed at a depth of 1900 ft.

Topeka Deepens Garman Project

Taking over the Garman Oil Co. project at Summerland, Topeka Oil Co. is deepening in Sespe shale below 1700 ft. The well is located on State tideland Permit No. 17 in the easterly section of the old waterfront field.

Field Will Test Corporation No. 1

With bottom at 6135 ft. in Arenaceous shale, Oliver C. Field is preparing to set 7 in. casing to test showings encountered since topping the Miocene at approximately 6075 ft. The well is located on a northwesterly extension of the Gato Ridge anticline in sec. 21, 9-33, east of the old Santa Maria field.

NORTHERN COUNTIES WILDCATS

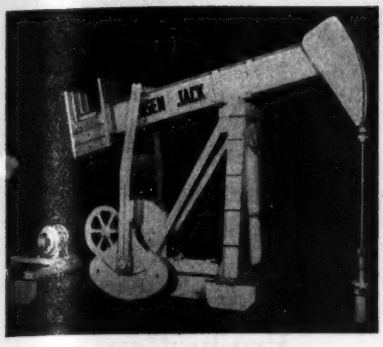
County	Well	No.	Section	Depth	Status
Merced	Stone, Elmer B.	1	8, 12-11	1980	Drilling
Monterey	The Texas Co., Arroyo Seco	1	11, 19-15	4178	Drilling
Solano	Standard Oil Co., C.P.C.	1	15, 5-2	3930	Drilling
Sutter	Buttes Oilfields, Inc.	5	1, 15-1	3150	Drilling

COASTAL COUNTIES WILDCATS

Area	Well	No.	Section	Depth	Status
Santa Barbara County					
Bicknell Area	Hogan Pet. Co.	1	33, 9-34	1204	Drilling
Capitan	Litho Oil Co., Rhode I.	1	4, 4-30	3015	Idle
Carreaga	Barbara Pacific Oil Co.	A-A 2	8, 8-33	6820	Cemented-Idle
Foxen Canyon	Richfield Oil Corp., Tinaquaic	1	36, 9-32	5541	Idle
Gato Ridge	The Petrol Corp., Tog.	32-B	9, 8-32	3100	Run tubing
Goleta Gas Area	Gen. Pet. Corp., More	4	15, 4-25	4757	Drilling
Guadalupe	Cole, Fred	Ferrini 1	15, 10-35	4700	Idle
Orcutt	O. C. Field Gas. Corp.	1	21, 9-33	6137	Drilling
	So. Calif. Drlg. Co., Houck	1	9, 9-33	5002	Idle
Lompoc	Sun Bell Oil Co.	1	28, 8-34		Foundation
Los Olivos	United Western Oil Co.	1	15, 7-30	3830	Drilling
San Marcos	Richfield O. Corp., San Marcos	1	20, 6-29	1961	Drilling
Summerland	Glenray Oil Co., Glenray	1	1, 4-26	90	Idle
	Oil Group, Inc., Hyland	1	16, 4-26	1315	Idle
	Topeka Oil Co.	17-1	22, 4-26	1707	Drilling
San Luis Obispo County					
Elk Horn	Calif. Pet. Prod., Irons	1	19, 10-24	2265	Idle
	Newton, S. M., Stafford	1	18, 31-21	2925	Drilling
	Temblor Oil Co.	1	22, 31-21	3465	Idle
Paso Robles	Epco, Inc.	1	27, 26-13	5575	Drilling
Ventura County					
Red Mountain	Martin J. W.	3	15, 4-21	1700	Drilling
Sespe	English, J. A.	2	13, 4-19	2190	Drilling
	Merchants Pet. Cochran	8	1, 4-20	1910	Pumping
	Nevada-Fortuna Oil Co.	1	13, 4-19		Rig
	Renard Oil Co.	1	6, 4-19		Rig
Shiells Canyon	Galveston Oil Co.	1	5, 3-19	3140	Ran elec. log
	Shomy Oil Co., Shomy	1	32, 4-19	825	Idle
Simi	Levesque, G. M.	1	17, 2-18	1850	Drilling
Tar Creek	Section 20 Oil Co.	1	20, 5-19	2860	Drilling

Jensen Brothers Mfg. Offer New Pumping Unit

The illustration shows one of the new Model D pumping units just placed on the market by Jensen Brothers Manufacturing Co., Coffeyville, Kansas, and its dealers in fields throughout the United States. This improved model has new style cranks and crank weights, and is mounted (optional) on a Jensen subbase. The unit shown has a wire line or cable head straight lift, but may also be had with a straight lift mechanism



perfected by Jensen Brothers. The company builds this unit in ten sizes for wells ranging in depth from 500 ft. to 6000 ft. It may be powered with any constant speed prime mover.

Literature on the new Jensen unit says in part: "To increase the flexibility of our pumping unit, we have found that a rotary counterbalance in conjunction with an adjustable static counterbalance affords the best results. The ease and accuracy with which Jensen pumping units can be adjusted to balance a well contribute materially to their prominent position in the industry."

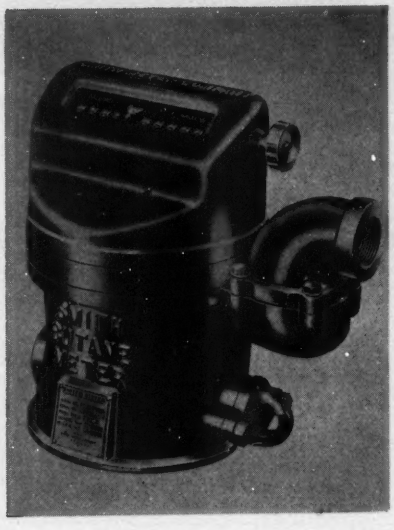
To obtain clearance to service a well equipped with a Jensen Unit, it is a simple matter to lift off the equalizer bearing support and let it swing out of the way.

Jensen Brothers have built pumping equipment exclusively for twenty years. They enjoy a considerable foreign business and maintain an export office at 136 Liberty Street, New York. Even the gear reduction for the Jensen pumping unit is manufactured in the company's modern plant at Coffeyville.

Smith Butane Meter at Houston Oil Show

What is believed to be the only meter on the market built especially for measuring butane was exhibited at the Houston Oil Show by the Smith Meter Co. and was the object of keen interest.

For the past five years the Smith Meter Co. has worked closely with the petroleum industry in designing and building various types of meters for loading rack, tank truck, pipe line, marine terminal, and refinery service. The new butane meter, known as Model BU-40, was developed by this company to meet the in-



dustry's needs for fast and accurate control in handling and dispensing butane. It is the result of years of experience in building meters for liquefied gases and conforms with the Butane Code in that it is built to withstand 250 pounds of working pressure. Noncorrosive construction permits satisfactory use with all types of commercial butane.

"Many of the leading operators are already using this new meter on their tank trucks and dispensing racks to eliminate handling losses," states Allan Floyd, president of the Smith Meter Co., "and results are extremely satisfactory. Dealers and operators find that the use of an accurate meter on trucks eliminates misunderstandings and builds good will.

"Successful butane metering, however," explained Mr. Floyd, "requires a different type of hookup on the tank truck as compared to metering gasoline, fuel oil, etc. We have developed diagrams for two types of installation, either of which assures successful meter application to tank trucks and dispensing racks."

Link-Belt Power Transmission Book

Link-Belt has published a 272-page Book No. 1600, which it announces as a new handbook of modern power transmission units, containing complete design and application data, dimensions, weights, list prices, cross-indexed for the convenient use of design engineers and plant managers.

Included in the book are Link-Belt Shafer self-aligning ball and roller bearing units, newly designed for greater life; unmounted radial-thrust bearings; babbitted bearing units; take-ups; friction and jaw clutches, including the newly-acquired Twin Disc line; cast and cut tooth gearing; pulleys; safety collars; shafting; shaft couplings; drop hangers; welded steel base plates, etc.

A copy of this new book will be sent to any interested reader upon request, which may be addressed to Link-Belt Co., Chicago, Philadelphia, or other office of the company.

L. G. Robinson Back From Trip for Security

L. G. "Pat" Robinson, a member of the sales staff of Security Engineering Co., Inc., recently returned to the Main Office and Plant at Whittier, Calif.,

after an extended trip to various parts of the country in the interests of his company.

Mr. Robinson left last June on a trip which took him through the Rocky Mountain and Canadian oil districts, where he carried on research and survey work for Security. On completion of the circuit, he returned to California and spent several months in the company's sales department at Bakersfield.

Following his work in the San Joaquin Valley District, Mr. Robinson was on the move again, this time for Illinois in the capacity of Factory Representative for Security. He established a branch office in Centralia, Illinois, and then moved to Houston, Texas, in February, where he carried on his duties as Factory Representative in the Gulf Coast area.

Completing his activities at Houston, "Pat" returned to California, where he is now working out of Security's headquarters at Whittier.

Publish Revised Edition

The eighth revised edition of "A.P.I. Rig Iron Standards" has just been published by the American Petroleum Institute's Division of Production. Copies may be obtained from the Division's office at Dallas, Texas, for 50 cents, with discount for quantity purchases.

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MAPS

Large maps of Los Angeles Basin oil fields and map showing all California oil fields. Price $15.00 each on paper and $20 each on cloth. Individual state oil and gas maps of Mid-Continent and Rocky Mountain regions. Maps show geological cross sections at base. These maps indicate wells drilling, wells producing and abandoned, with depths.
All maps revised up to date of purchase.
JAMES C. BRANSFORD
1127 Story Bldg.
Los Angeles, Calif.
Phone: TUcker 7530

Oil Men's Calendar

C.N.G.A. Meeting First Thurs. Each Month.

June

25-July 1—13th International Congress of Carbide, Acetylene, Oxy-Acetylene Welding and Allied Industries, Munich, Germany.

26-30—American Society for Testing Materials, 42nd Annual Meeting, Chalfonte Haddon Hall, Atlantic City, N. J.

July

10-17—American Institute of Mining & Metallurgical Engineers, Regional Meeting, San Francisco, Calif.

October

4-6—American Institute of Mining & Metallurgical Engineers, Petroleum Division, Galveston, Tex.

9-10—American Gas Assn., Annual Convention, New York.

16-20—National Safety Congress and Exposition, Chalfont-Haddon Hall, Atlantic City.

Week of 16—40th Annual National Automobile Show, Grand Central Palace, New York.

Earl V. Tavan

Earl V. Tavan, 48, driller, is urged to communicate at once with Katharine N. Tavan, 8737 Ashcroft Ave., West Hollywood. Mr. Tavan, who is 6 feet 2 inches in height and wears dark glasses, was last heard from in Long Beach in February.

California Crude Oil Production

Two Weeks Ended May 27, 1939

	May Daily Quota	Average Daily Production	Excess
San Joaquin Valley			
Belridge—North	13,575	11,786	*1,789
Belridge—South	1,895	1,056	*839
Buena Vista	16,130	15,918	*212
Canal	4,590	4,463	*127
Coalinga-East (Eocene)	4,778	4,773	*5
Coalinga—East-West	15,397	6,990	*8,407
Edison	2,310	2,400	90
Elk Hills	7,185	9,780	2,595
Fruitvale	6,360	6,354	*6
Greeley	1,810	1,741	*69
Kern Front	7,335	6,940	*395
Kern River	5,800	2,450	*3,350
Kettleman No. Dome	52,310	52,825	515
Lost Hills	3,930	3,070	*860
McKittrick	3,675	3,437	*238
Midway	39,265	41,355	2,090
Mount Poso	12,455	12,035	*420
Mountain View	7,855	8,430	575
Rio Bravo	6,905	7,138	233
Round Mt. and Coffee Canyon	10,410	10,732	322
Ten Section	8,895	9,160	265
Wasco	1,060	1,325	265
Other Fields	2,795	2,869	74
TOTAL	236,720	227,027	*9,693
Coastal Counties			
Elwood	4,040	4,296	256
Rincon	2,825	3,664	839
Santa Maria	5,795	3,155	*2,640
Gato Ridge	1,860	1,490	*370
Santa Maria Valley	18,035	9,781	*8,254
Santa Paula-Newhall	5,290	5,487	197
Ventura Avenue	29,865	34,608	4,743
Other Fields	5,310	5,600	290
TOTAL	73,020	68,081	*4,939
Los Angeles Basin			
Alamitos-Seal Beach	6,760	7,460	700
Brea-Olinda	8,150	5,469	*2,681
Coyote—East	2,620	2,340	*280
Coyote—West	7,535	7,311	*224
Domingues	17,260	21,606	4,346
El Segundo	3,100	3,351	251
Huntington Beach—New and Old	24,060	29,424	5,364
Inglewood	11,680	11,434	*246
Long Beach	39,550	48,585	9,035
Montebello	5,710	5,863	153
Montebello-West End	5,615	12,829	7,214
Playa del Rey	4,680	5,056	376
Richfield	7,180	7,904	724
Rosecrans-Athens	9,425	13,204	3,779
Santa Fe Springs	25,500	27,850	2,350
Torrance	5,651	5,740	89
Torrance "34" and "D & B"	13,064	15,394	2,330
Wilmington	66,810	90,688	23,878
Other Fields	3,250	3,640	390
TOTAL	267,600	325,148	57,548
STATE TOTAL	577,340	620,256	42,916

*—Shortage.